JULY
11
1958

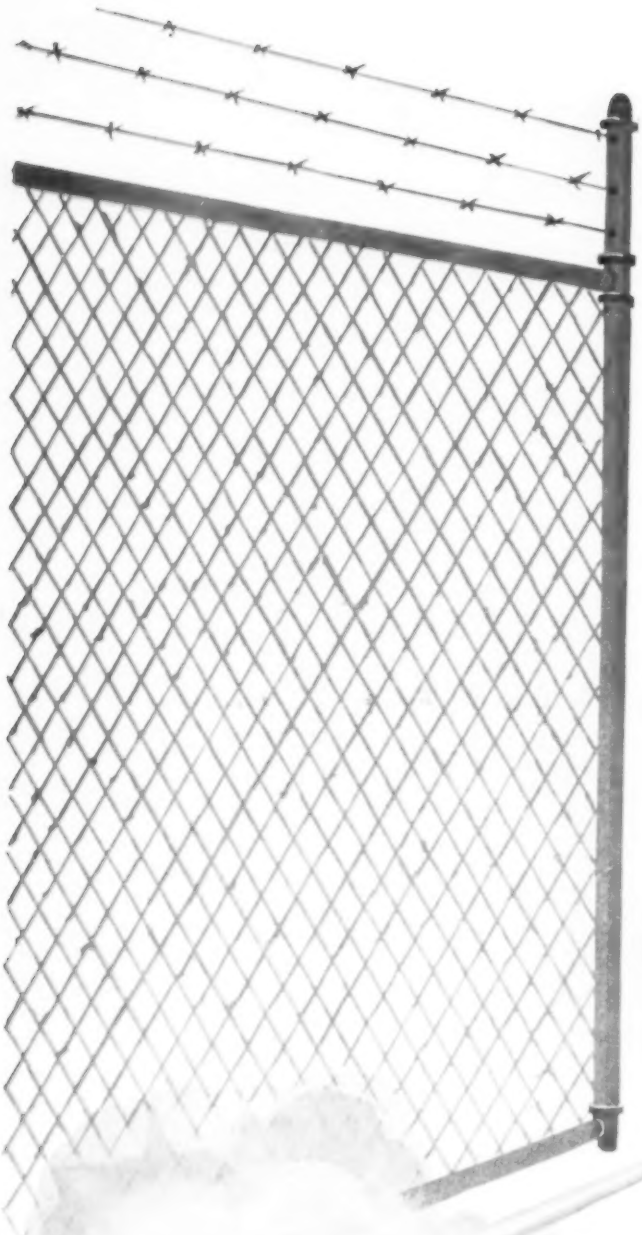
PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

Atomic energy's inroads will be small 23
Miscible test indicates 100% recovery ... 24
Four Corners eases Texas tight supply ... 25
Contractors process seismic data 32
Are offshore platforms high enough? 38
New tools fight evaporation losses 55
Pennsylvania starts 55-in. gas line 60
Pemex wants U.S. money for growth 68
Business outlook has brighter shine 77
Oil drums strike sour notes in Africa 83

Price 50 Cents

UNIVERSITY MICROFILMS
313 NORTH 1ST ST
ANN ARBOR MICH
A



Wherever you are, there's a distributor of Nitrogen Division ethanolamines and ethylene glycols nearby. Why not make a note right now of the one nearest you.

Local stocks of ethanolamines and ethylene glycols are maintained by the following Nitrogen Division distributors for serving the oil and gas industry:

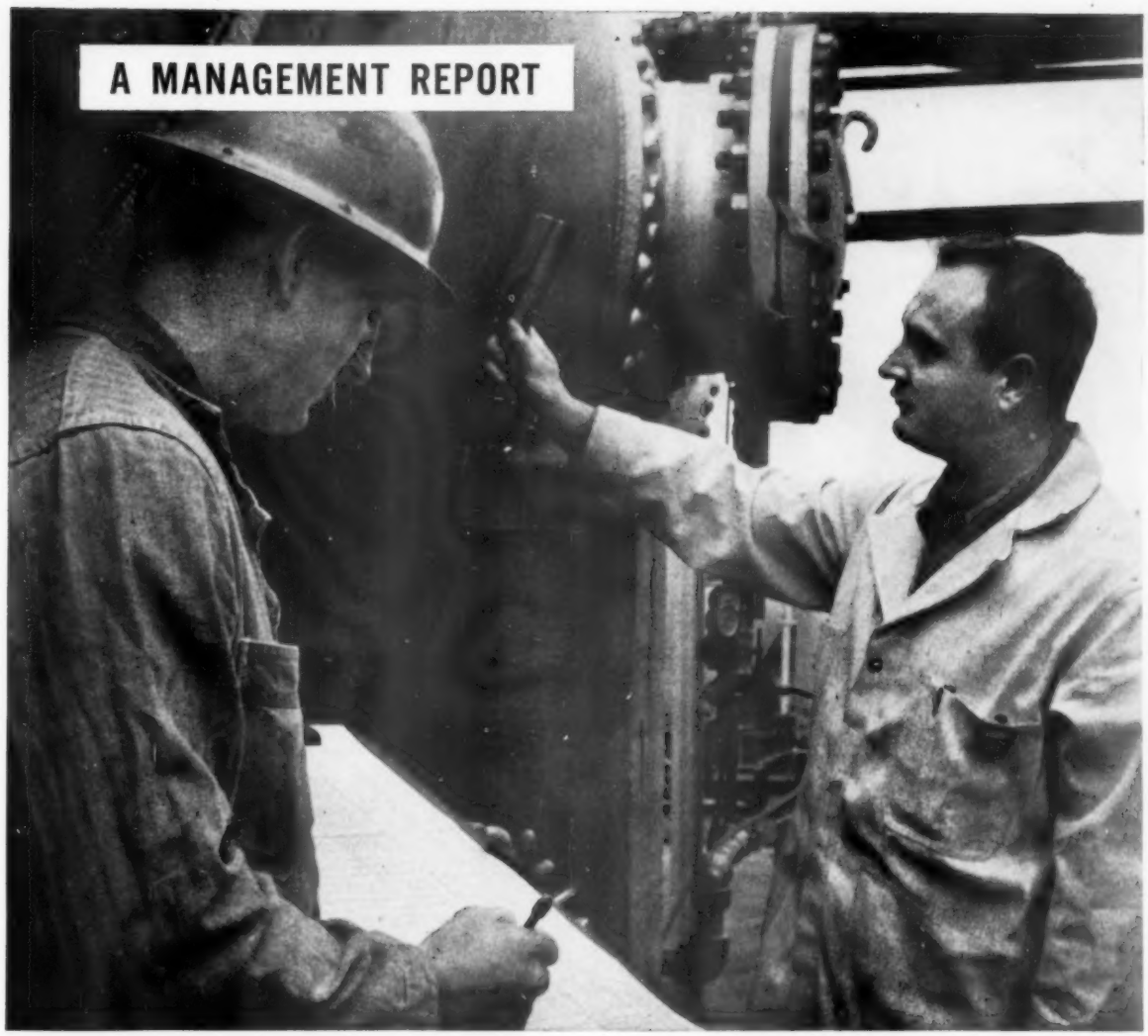
Los Angeles Chemical Company, South Gate, Calif. . . . **Cole & De Graff,** San Francisco, Calif. . . . **Mine & Smelter Chemical Company,** Denver, Colo. . . . **Acid Products Company, Inc.,** Chicago, Ill. . . . **Mid Continent Chemical Company,** South Bend, Ind. . . . **Coastal Enterprises, Inc.,** Abbeville, La. . . . **Southwest Gas Equipment Company,** Liberal, Kans. . . . **Thompson-Hayward Chemical Company in:** Des Moines, Iowa; Wichita, Kans.; Shreveport, La.; Oklahoma City, Okla.; Tulsa, Okla.; Dallas, Tex.; Houston, Tex.; Lubbock, Tex.; San Antonio, Tex. . . . **Dyce Sales & Engineering Service Co.,** Billings, Mont. . . . **Harry A. Baumstark & Co.,** St. Louis, Mo. . . . **Aetna Color & Chemical Co.,** E. Patterson, N. J. . . . **George S. Coyne Chemical Company,** Philadelphia, Pa. . . . **T. H. Baylis Company,** Providence, R. I. . . . **Continental Chemical Company,** Patterson, N. J.

GET *FAST DELIVERY* ON ETHANOLAMINES AND ETHYLENE GLYCOLS — ANYWHERE!

Allied Chemical

Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate—85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Sodium Nitrate • Methanol • Nitrogen Solutions • Nitrogen Tetroxide • Fertilizers & Feed Supplements

Nitrogen Division · Department GA 2-22-6 · 40 Rector Street, New York 6, New York



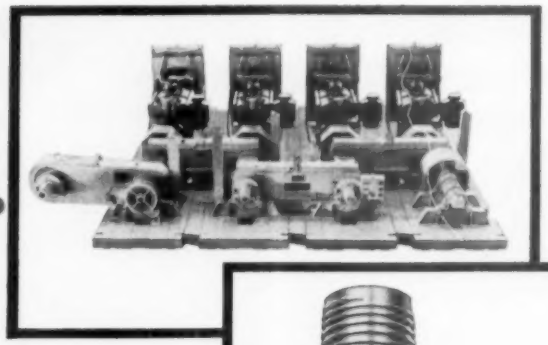
SINCLAIR HAS THE ATOM AT WORK

by Dr. A. I. SNOW
Senior Project Chemist
Radiation and Tracer Laboratory
SINCLAIR RESEARCH
LABORATORIES, INC.
a subsidiary of

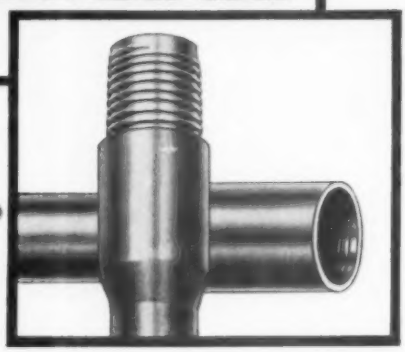
"Practical application of nuclear energy in the oil business isn't just a long-range proposition; at Sinclair we already have the atom profitably at work. Radioactive tracers are doing jobs that were impossible or very time consuming by other means. We use these tracers to evaluate motor fuel and lube oil additives, find trouble spots in intricate refinery units and solve pipe line problems. At the same time, our basic research on the effects of radiation on petroleum processes and products goes forward. Making the atom a work-a-day tool is just one of the many ways in which Sinclair Research is pacing petroleum progress."

SINCLAIR OIL CORPORATION · 600 FIFTH AVE., NEW YORK 20, N.Y.

Drives.



Drill Pipe..



Day and Night Service

from Mid-Continent where and when you need them....

Around the clock... wherever your location... depend on Mid-Continent for prompt supply of parts and equipment from the thousands of items carried in stock at your Mid-Continent field store. For complete in-the-field supply, visit your nearest Mid-Continent field store, or call your local Mid-Continent representative.

MID-CONTINENT SUPPLY CO.

MID-CONTINENT BUILDING • FORT WORTH, TEXAS

Export Division: 45 Rockefeller Plaza, New York 20, N. Y. Cable: MIDCUMPORT NYK

THE WORLD'S LARGEST INDEPENDENT OIL FIELD SUPPLY COMPANY

PETROLEUM WEEK

Publisher—Harry L. Waddell
Editor—LeRoy Menzing
Assistant to the Publisher—William F. Bland

Managing Editor—Richard M. Machol

Senior Editors—Glenn Green, Jr. (Houston), Wanda M. Jablonski, Robert E. Spann, John Barton, Robert L. Davidson, Halsey Peckworth

News Editor—Clyde LaMotte

Foreign News Editor—Georgia Macris

Assistant Editors—John Paluszek, Ade Ponikvar, Betty Deane Suiter

District Editors
Bakersfield—William Rintoul
Chicago—Stewart W. Ramsey
Houston—Eugene Bush
Tulsa—William P. Sterne

Presentation—William A. Caperell, Jr., director; Mildred Schutte

Editorial Assistants—Larry Christiansen, Jr., Barbara Farnsworth, Robert J. Barrett (Chicago), Carole A. Masucci

Domestic News Service
Atlanta Bureau—Charles T. Dixon, chief, Frances Ridgway
Cleveland Bureau—William G. Meldrum, chief, Violet Bashian
Dallas Bureau—Kemp Anderson, Jr., chief, Mary Lorraine Smith
Detroit Bureau—Donald MacDonald, chief, Nancy Ann Moore
Los Angeles Bureau—John Kearney, chief, Michael Murphy, Jack Meyer, Marvin Petal
San Francisco Bureau—Margaret Ralston, chief, Jenness Keene, Sue Johnson
Washington Bureau—George B. Bryant, Jr., chief, Glen Bayless, Dean Reed, A. R. Patla, D. O. Loomis, Ray Calvin, Ernest Conine, Arthur Kraft, Seth Payne
Correspondents: Albuquerque, Austin, Baton Rouge, Billings, Bismarck, Calgary, Casper, Cheyenne, Corpus Christi, Denver, Edmonton, Fairbanks, Farmington, Ft. Worth, Great Falls, Honolulu, Jackson (Miss.), Lake Charles, Little Rock, Memphis, Midland, Mobile, Montreal, New Orleans, Odessa, Oklahoma City, Ottawa, Philadelphia, Phoenix, Pittsburgh, Portland (Ore.), Regina, Sacramento, St. Louis, Salt Lake City, San Diego, Seattle, Shreveport, Spokane, Toronto, Vancouver, Winnipeg

Foreign News Service
Middle East Bureau—Onnic Marashian, chief
Caracas Bureau—John Pearson, chief
Bonn Bureau—Morrie Helitzer, chief, Silke Brueckler, Sydney Morrison, Helga Benecke
London Bureau—William Coughlin, chief, John Tunstall, Robert Gibson, John Shinn
Mexico City Bureau—Peter Weaver, chief
Paris Bureau—Robert E. Farrell, chief, Helen Avati, Richard Marbois
Tokyo Bureau—Sol Sanders, chief, Toshiko Matsumura
Correspondents: Amsterdam, Beirut, Bogota, Bombay, Brussels, Buenos Aires, Cairo, Colombo, Geneva, Guatemala City, Havana, Helsinki, Johannesburg, Karachi, La Paz, Lima, Manila, Melbourne, Rangoon, Rome, San Jose, Stockholm, Teheran, Vienna
Manager, McGraw-Hill World News Service—John Wilhelm

Economics Staff
Dexter M. Keezer, director; Robert P. Ulin, T. C. Boyden

Business Department
Advertising Sales Manager—Ervin E. DeGraff; *Western General Manager*—Donald O. Hanson; *Acting Circulation Manager*—Harriet Costikyan; *Promotion Manager*—N. F. Cullinan; *Advertising Service Manager*—John E. Thompson; *Research Manager*—Leo M. Murray; *Reprint Service*—Mary C. Murphy; *Southwestern Research Manager*—George Reid

Other McGraw-Hill Petroleum Publications
NATIONAL PETROLEUM NEWS — PLATT'S OILGRAM NEWS AND PRICE SERVICES

PETROLEUM WEEK

JULY 11, 1958
Vol. 7, No. 2

Number of copies of this issue printed: **48,113**

Published weekly by McGraw-Hill Publishing Co., Inc. James H. McGraw (1860-1948), founder. Publication office: 871 N. Franklin St., Chicago 10, Ill. See panel below for directions regarding subscriptions or change of address.

Executive, Editorial, Circulation and Advertising offices: 330 W. 42nd St., New York 36, N. Y. Donald C. McGraw, President; Joseph A. Gerardi, Executive Vice President; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice President, Publications Division; Ralph B. Smith, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator.

Subscriptions are solicited only from executives, supervisors, and such technically trained personnel as engineers, geologists, chemists, etc., in the oil and natural gas industries, who are engaged in exploration, drilling, producing, processing, petrochemical manufacture, transportation, or wholesale marketing. **Position and company connection must be indicated on subscription orders.** Subscription rate for all countries: $3 per year. Single copies 50c. Second class mail privileges authorized at Chicago, Ill. Printed in U.S.A. Title registered in U. S. Patent Office.

© Copyright 1958 by McGraw-Hill Publishing Co., Inc. All rights reserved.

Unconditional guarantee: Our primary aim is to provide subscribers with a useful and valuable publication. Any comments or suggestions for improvement will be most welcome. On written request from any subscriber, the publisher agrees to refund the unused portion of the subscription price.

Subscriptions: Address subscription correspondence and change of address to Fulfillment Manager, Petroleum Week, 330 W. 42nd St., N. Y. 36, N. Y. On address changes, please give old and new address and zone numbers, if any, and enclose an address label from a recent issue if possible. Please allow one month for change to become effective.

Postmaster: Please send form 3579 to Petroleum Week, 330 W. 42nd St., New York 36, N. Y.

in the Financial center of the Southwest

REPUBLIC is the Oil Man's Bank

In drilling or financing, it's *results* that count . . . and more and more oil producers are finding the right results through financing in the Oil Department of Republic National Bank of Dallas . . . a pioneer oil bank of the Southwest . . .where your production financing needs are met by men who know the oil industry. Take *your* next problem to Republic . . . the oil man's Bank.

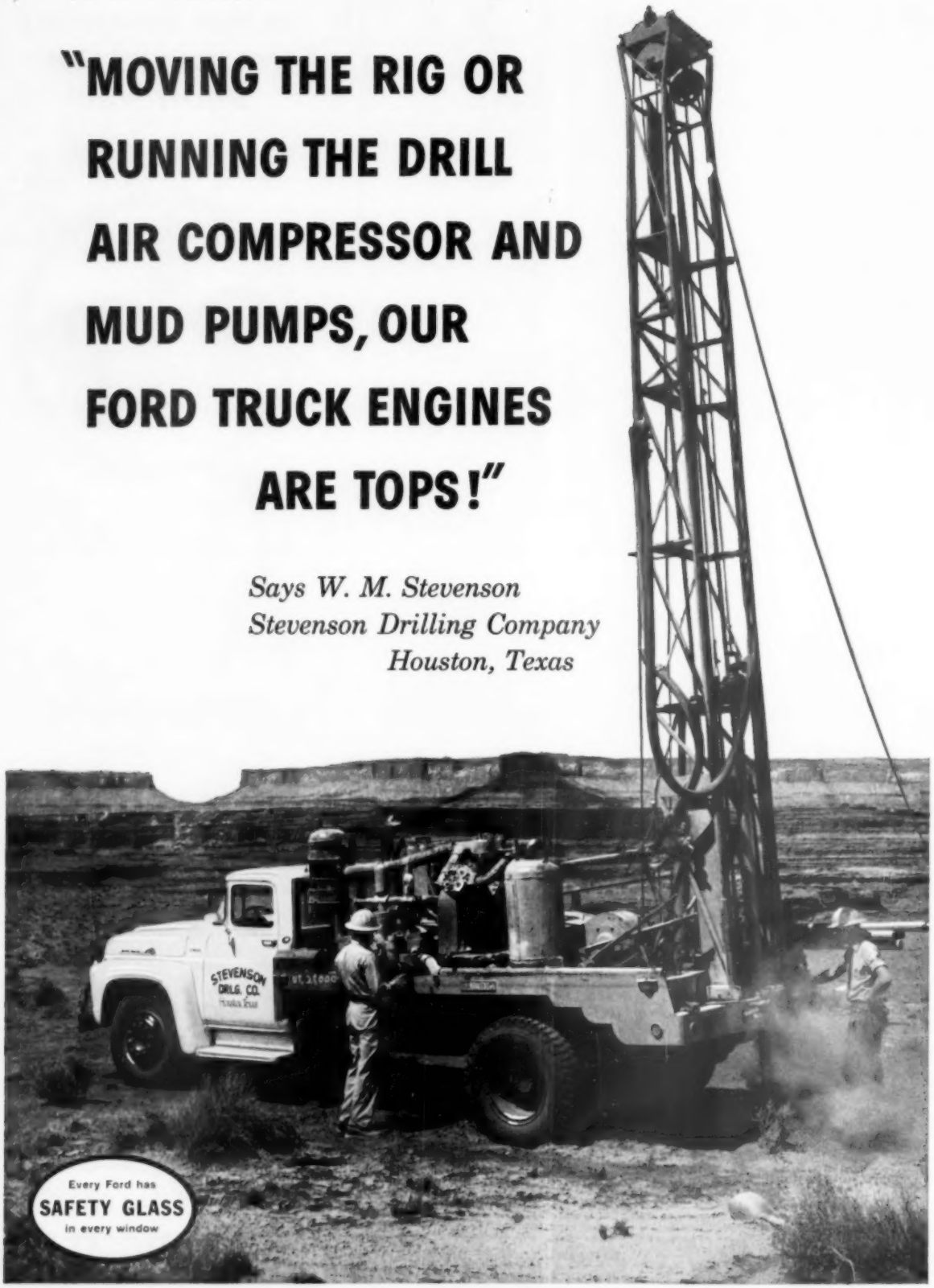
CAPITAL FUNDS OVER
$90,000,000
LARGEST IN THE SOUTH

REPUBLIC National BANK of Dallas

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

"MOVING THE RIG OR RUNNING THE DRILL AIR COMPRESSOR AND MUD PUMPS, OUR FORD TRUCK ENGINES ARE TOPS!"

Says W. M. Stevenson
Stevenson Drilling Company
Houston, Texas



Official 1957 registrations show ***AMERICAN BUSINESS BUYS MORE FORD TRUCKS THAN ANY OTHER MAKE!***

"We normally run truck engines on LP-Gas while drilling, but our Super Duty V-8 is proving so economical we don't plan to convert it

"Our newest Ford is a '58 Extra Heavy with 401-cu. in. Super Duty V-8 engine. This unit utilizes a transmission power take-off to operate the drill. We can drill down to 1,500 feet with this unit, although normally we go 100 to 150 feet for shot-hole work. Explosives are then planted and seismographic studies made of the area.

"Getting to the job over difficult terrain in the Rockies is only the beginning for us. The truck engine must power the combination air or water drill 8 hours a day. We operate 5 combination drill rigs and 2 water drills, along with supply trucks (like the pickup with 5-man cab shown above) and two-ton water tank trucks.

"We've used Ford trucks since 1946 . . . it's proved very economical for us. Our repair costs have been low, thanks to Ford durability. Also, Ford replacement parts are available most everywhere, and cost much less than parts for other makes we've owned."

Bring extra savings to your business . . . make your next truck a FORD!

Ford trucks are your best buy! Ford's initial costs are *low* and resale value is traditionally high. The modern Ford Styleside pickups are the lowest-priced models available with full cab-wide body . . . giving you 23% more loadspace than any traditional pickup box.

Ford Tilt Cab trucks offer exceptional payloads, maneuverability, service accessibility and driving ease . . . they're the most popular tilt-cab line, *by over two to one!*

Only Ford offers the economy of Short Stroke power in all engines, Six or V-8. And Ford's Heavy Duty V-8's offer new, advanced durability features. The modern Ford Six has a new carburetor that gives up to 10% greater gas mileage. It's plenty peppy, too, with more horsepower per cubic inch than any other six in its class.

Ford's rugged cab and chassis construction means these new '58s are built to last. All this plus the proven fact that Ford trucks last longer adds up to America's No. 1 truck value. See your local Ford Dealer for the latest in '58 trucks or the best in A-1 used trucks.

FORD TRUCKS COST LESS

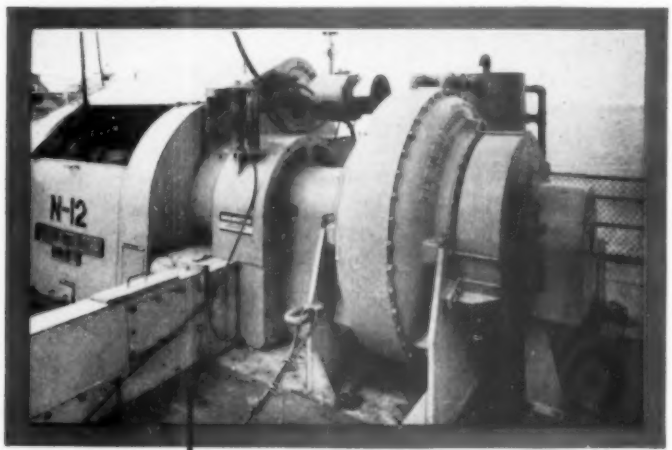
. . . LESS TO OWN
. . . LESS TO RUN
. . . LAST LONGER, TOO!

Only Parkersburg Hydromatic Brake Protects Your Rig Against

"RUNAWAY" PIPE

The Parkersburg Hydromatic Brake is the only drawworks brake that eliminates the danger of pipe running away in case of brake failure. With a Hydromatic Brake, it is impossible for a load to be suddenly dropped. In the first place, as long as the water supply is maintained to the brake, failure is impossible. And should the water supply be interrupted, the water remaining in the brake and supply tank will keep the load on the drawworks in check until the mechanical brake can be applied.

This reserve safety factor costs you no more. In fact, a Parkersburg Hydromatic Brake costs you less to buy and operate. The only parts subject to wear and replacement are minor ones. It also saves wear and tear on wire lines and other drilling equipment.



THE PARKERSBURG RIG AND REEL CO.
PARKERSBURG WEST VIRGINIA
QUALITY CRAFTSMANSHIP SERVICE
MADE IN U.S.A.
PESA

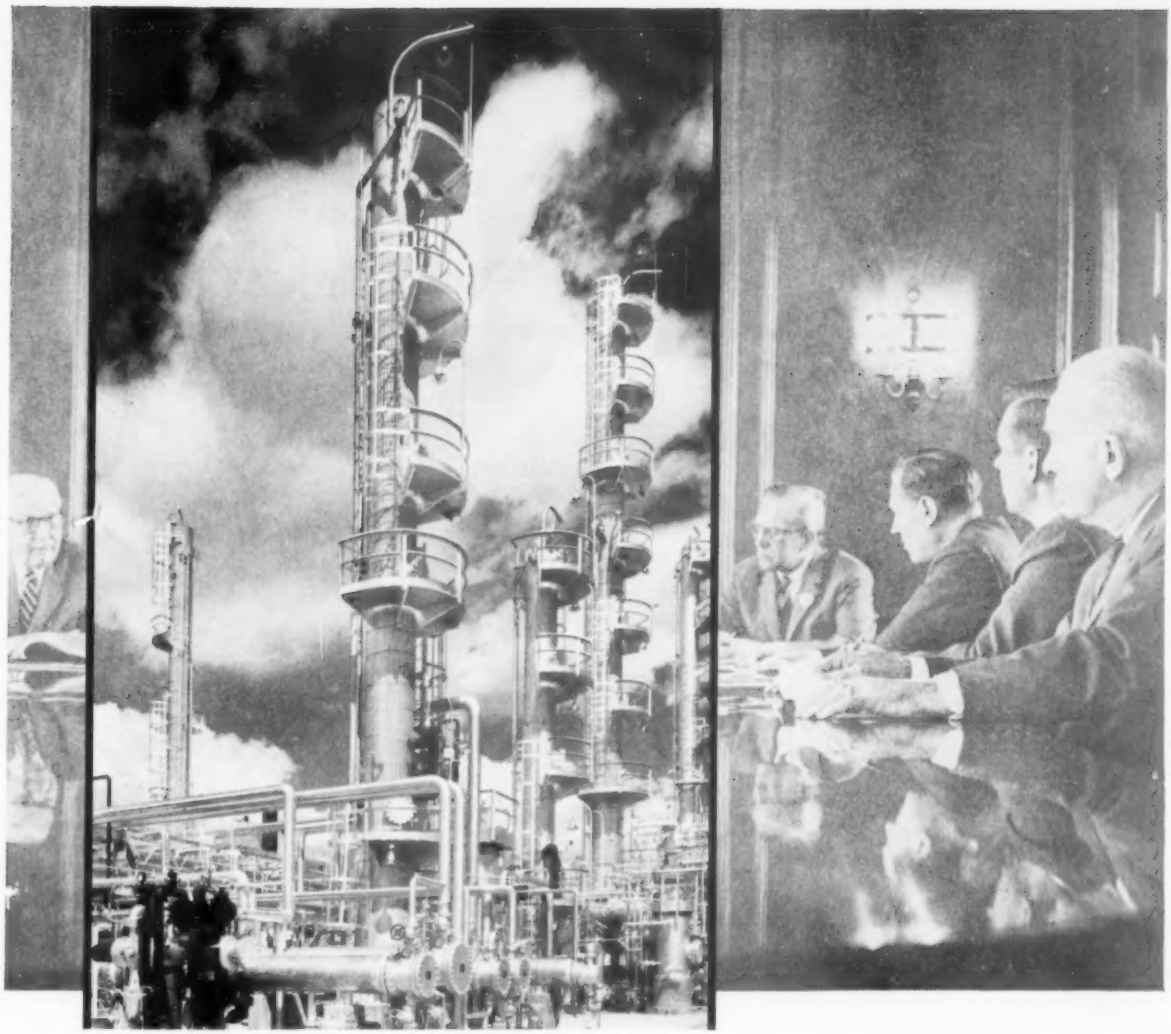
Ask your Parkersburg sales engineer about the safest, most economical drawwork brake made — the Parkersburg Hydromatic Brake.

The **PARKERSBURG** RIG AND REEL COMPANY

DIVISION OF PARKERSBURG-AETNA CORPORATION

DRILLING and SPECIALTIES DIVISION OFFICES:

P. O. BOX 1160
PARKERSBURG, WEST VIRGINIA



Pritchard's applies automatic data logging

for GOOD FINANCIAL DESIGN

Socony's new 6000 bbl/day catalytic reforming unit at Casper, Wyoming might have been just another refinery addition—except for one vital difference. Along with the usual vessels and piping, J. F. Pritchard & Co., engineers and builders of the unit, provided a complete data logging and scanning system to monitor processes. This centralized automatic system supplements manual supervision and contributes to more efficient operation. The end result is lower operating costs and more profitable refinery operation.

The construction of this ultra-modern refining unit is an example of how Pritchard looks beyond the obvious to engineer and build plants with good financial design — the "extra" that gives Pritchard clients maximum return on capital.

Pritchard's experience in petroleum ranges from the design, engineering and construction of individual processing units to complete refineries. Pritchard also serves the oil field processing industry with facilities for operations such as sulphur removal and recovery, natural gas dehydration and pressure maintenance. If you are considering new construction in these fields, ask Pritchard to show you how good financial design can work for you.

PROFITABLE FACILITIES THROUGH GOOD FINANCIAL DESIGN

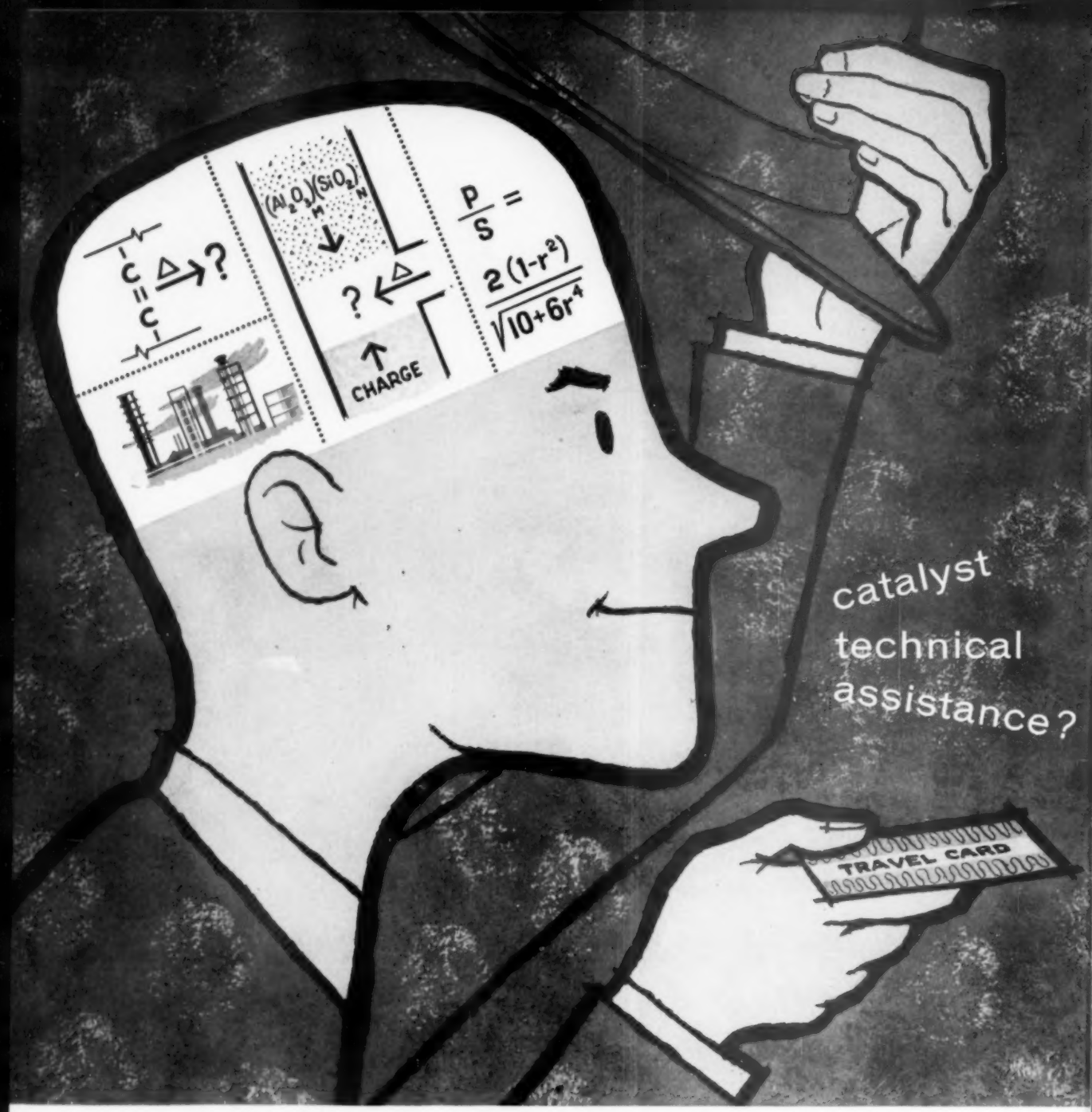
J. F. Pritchard & Co.

ENGINEERS • CONSTRUCTORS

Dept. 408, 4825 Roanoke Parkway, Kansas City 12, Mo.

OFFICES IN CHICAGO, HOUSTON, PITTSBURGH, NEW YORK

SERVING THE GAS, POWER, PETROLEUM AND CHEMICAL INDUSTRIES



The Man from Davison is quick with a travel card, quick with your answer

The Man from Davison will go anywhere any time. He's worked in advisory capacity on hundreds of complex petroleum catalyst jobs. He is best qualified to help you arrive at the most practical and economical answer to your catalyst needs. He's ready to put his experience and knowledge to work on your problem. He's available at once.

DAVISON
CHEMICAL COMPANY
Division of W. R. Grace & Co.
Baltimore 3, Maryland

Buy DAVISON—the quality catalyst backed up by experience, research, technical assistance, service!

Is multi-pass shell construction practical in heat exchanger design?

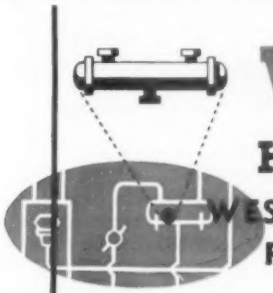
Question:
Are the design features of multi-pass shell construction sound and applicable for process heat exchangers?

Answer:
Yes, *if properly designed and applied,* multi-pass shell heat exchangers effect substantial savings in initial installation costs. Western has been successful with multi-pass shell construction because . . .

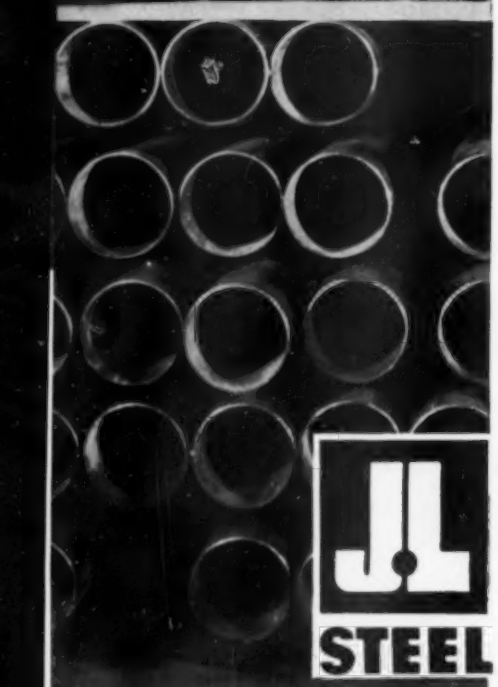
. . . of a thorough knowledge of the applications for which each Western heat exchanger is designed. Consequently, Western two-pass shell exchangers are recommended and specified only for those applications where they are ideally suited.

Western multi-pass shell exchangers have achieved satisfactory service for our customers at far lower investment cost. By reducing the number of shells required to handle specific applications, the Western multi-pass shell exchanger does the work of two exchangers at substantially lower initial cost.

A Western representative will gladly advise you as to the possibility of applying two-pass shell construction to your next heat transfer requirements.



WESTERN
HEAT EXCHANGERS
WESTERN SUPPLY COMPANY
P.O. Box 1888 – Tulsa, Oklahoma



"EVERY LENGTH QUADRUPLE-TESTED FOR UTMOST DEPENDABILITY"

Rigid quality control has top priority in production of J&L's Electricweld pipe for gathering, distribution and transmission lines.

Every length is pressure-tested under the specified A.P.I. or A.S.T.M. hydrostatic test requirement both in time and in degree of pressure. Lengths to 60 feet speed installation, reduce number of field welds.

Electricweld pipe is available from 6⅝ inches through 12¾ inches O.D. Electricweld line pipe is manufactured to appropriate A.P.I. and A.S.T.M. specifications.

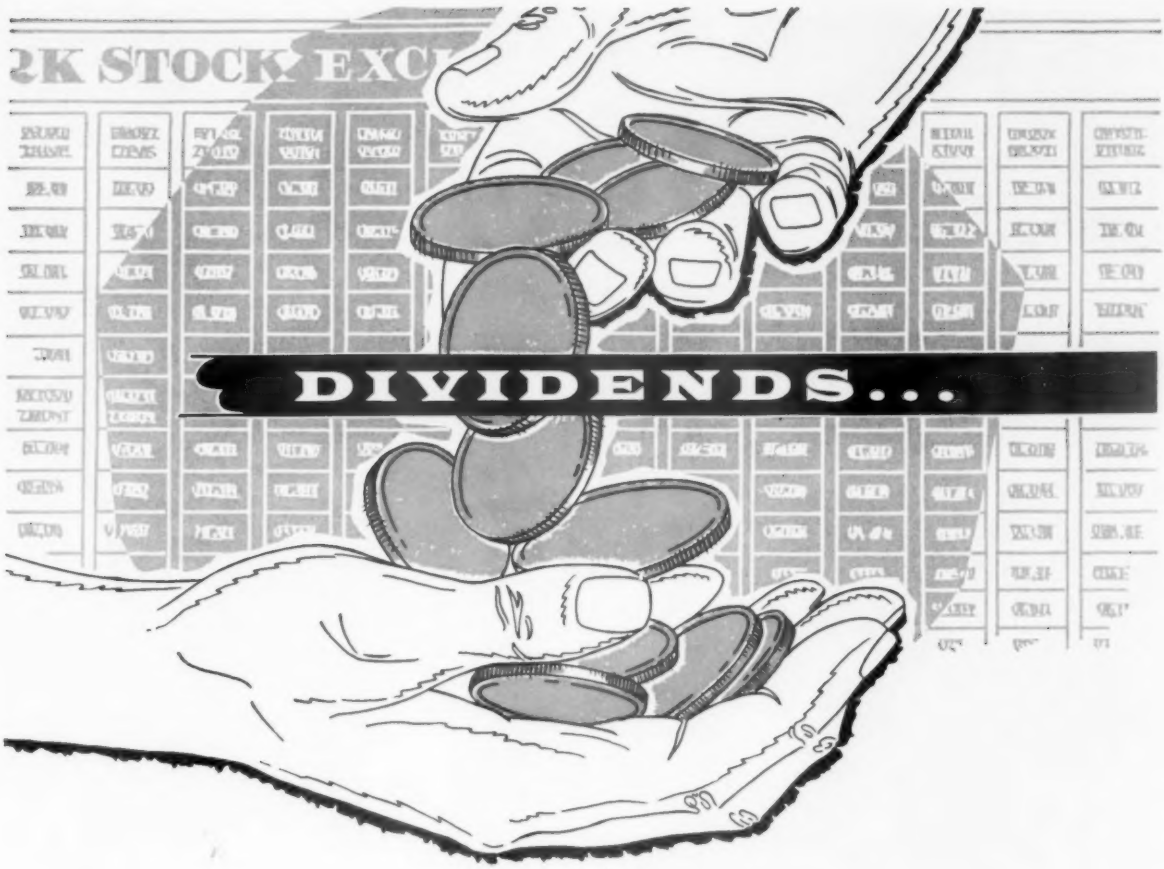
In addition to **visual inspections,** each length of pipe is given a **crush test,** to determine weld strength and quality of steel. It is subjected to a pressure test on one of the largest and most modern **hydrostatic testers** in the world. As an additional precaution and assurance to the customer, Jones & Laughlin is giving both ends of each joint a **magnaflux examination.**

Get complete information on Electricweld line pipe from your J&L distributor or write direct to Jones & Laughlin, 3 Gateway Center, Pittsburgh 30, Pa.

J&L STEEL

Jones & Laughlin Steel Corporation

PITTSBURGH, PENNSYLVANIA



. . . that help you meet today's rising costs of doing business

Thousands of business and industrial firms in Texas are receiving substantial dividends without tying up needed operating funds in stocks, bonds or other securities. How?

They receive dividends as a result of having placed their workmen's compensation insurance with the Texas Employers' Insurance Association. Over five million dollars in dividends and discounts were distributed to policyholders of the Association in Texas last year . . . over $55,500,000 since organization.

You, too, may be able to join the thousands of Texas employers who receive these dividend payments. Investigate your opportunity to save . . . Now! Contact your nearest office or write direct to . . .

SERVICE OFFICES
ABILENE • AMARILLO • AUSTIN
BEAUMONT • CORPUS CHRISTI
DALLAS • DALLAS (OAK CLIFF)
EL PASO • FORT WORTH
FREEPORT • GALVESTON
HARLINGEN • HOUSTON
LONGVIEW • LUBBOCK
MIDLAND • ODESSA • PORT
ARTHUR • SAN ANGELO • SAN
ANTONIO • SHERMAN • TYLER
WACO • WICHITA FALLS

TEXAS EMPLOYERS
INSURANCE ASSOCIATION

HOME OFFICE:
EMPLOYERS INSURANCE BUILDING
DALLAS, TEXAS

AUSTIN F. ALLEN, *Chairman of the Board* BEN H. MITCHELL, *President*

Get longer tool-joint life— use Humble's **THREDKOTE 701**

THREDKOTE 701 is a top-quality thread lubricant containing 60% pure metallic zinc. When the joint is made up tight, the zinc in THREDKOTE 701 is deposited on the threads in a thin film. As the string is run, this zinc film effectively guards against metal-to-metal contact and prevents galling. The result: *longer tool-joint life.*

THREDKOTE 701 gives tool-joint threads superior lubrication. Joints make up tight and break out easy. And THREDKOTE 701 maintains its quality and consistency under the most rugged running conditions.

It is essential to give new tool-joint threads a careful and complete coat of THREDKOTE 701 for their first four or five trips. New tool joints resist make-up more than used tool joints; need extra lubrication and protection. The continued use of THREDKOTE 701 on each trip will keep your string running tight and true.

HUMBLE OIL & REFINING COMPANY

● *THREDKOTE 701 is one of a complete line of Humble thread compounds. There's one for almost every type of threaded connection. For more information on THREDKOTE, call your nearest Humble wholesale plant, or phone or write:*

Humble Oil & Refining Company
Sales Technical Service
P. O. Box 2180
Houston 1, Texas

HUMBLE

FOR FAST, SAFE BARGE LOADING

Clear the docks!

New CHIKSAN

BARGE LOADING ARM

SAVES ON

Line Handling Injuries
Dock Clutter
Lengthy Hookup Time
Hose Bursts
Replacement Costs

This newly developed barge loading arm ends hazardous manhandling of loading hoses, eliminates dangerous dock clutter. Mechanical operation makes hookup fast and simple... one man can handle the job in minutes with no physical strain.

Ball bearing swivel joints make it possible to rotate the arm to meet varying flange locations. After arm is flanged to barge riser, it can be left unattended. Arm will automatically conform to the various positions of the barge as loading or unloading is carried out. When not in use the operation arm can be raised up and out of dockside traffic.

Write For Illustrated Literature, Dept. 137

CHIKSAN

A SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION fmc

CHIKSAN COMPANY — BREA, CALIFORNIA • CHICAGO 5, ILLINOIS • NEWARK 2, NEW JERSEY

Well Equipment Mfg. Corp. (Division) Houston 1, Texas • Chiksan Export Company • Chiksan of Canada, Ltd., Edmonton, Alta.

United Refining Company's cat cracker casts an interesting reflection in the waters of the famous Allegheny River at Warren, Pennsylvania.

UOP Cat Cracker helps United increase gasoline yield up to 50% and reduces lower value middle distillates

UOP UNIVERSAL OIL PRODUCTS COMPANY
30 Algonquin Road, Des Plaines, Illinois, U.S.A.

More Than Forty Years Of Leadership In Petroleum Refining Technology

United Improves Flexibility And Economics With Fluid Catalytic Cracking Unit

by H. A. Logan Jr.,
President
United Refining Company
Warren, Pennsylvania

On June 23, 1957, United Refining Company completed 55 years in the refining of petroleum products. As auspicious as this occasion may have been, we did not celebrate in the usual sense. Rather, we concerned ourselves with future plans, in which a 2,500 BPSD UOP Fluid Catalytic Cracking unit, on stream May 5, 1957, has a significant part. Indeed, it is a happy feeling for us at United to know that we are going into our 57th year so well equipped for continuing our tradition of service to our customers by providing top quality petroleum products.

Cat Cracker proves best

Early in 1956, we approached Universal Oil Products Company, licensor of petroleum refining processes, for assistance in planning our modernization program. Because of our particular need, UOP suggested the Fluid Catalytic Cracking unit. But before making a final selection, we organized a thorough and complete study of the problem, including all available alternatives, to determine the process that would both allow us to best serve the needs of our customers with high-quality products, and to do so at reasonable initial investment and operating costs. As a result of this study, we found that the UOP Cat Cracker was the most satisfactory choice for us because the process afforded United a greater flexibility in charge stocks, better quality of products, and lower investment costs. With the addition of the UOP Fluid Catalytic Cracking unit, our refinery is equipped to process a much larger volume of Mid-Continent crude, which will account for the major proportion

H. A. Logan Jr.

of our light products. Thus, we now have a much broader base of operations, a greater flexibility, and a more favorable economic position than before.

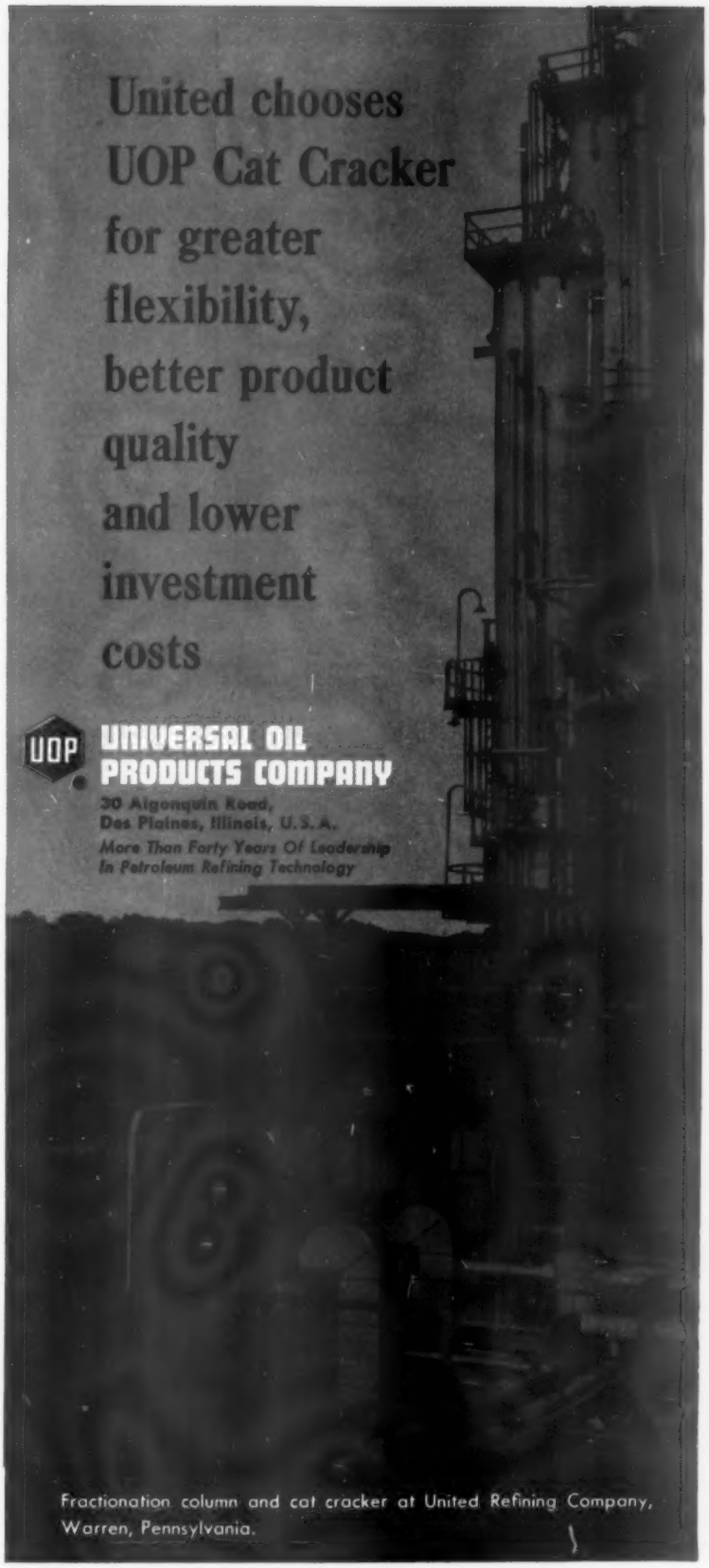
30% to 50% yield increase

As is true with other refiners, we are vitally concerned with yield. Since the UOP Fluid Catalytic Cracking unit was placed on stream, our gasoline yield has increased from 30% to 50% with a corresponding reduction in the production of lower value middle distillates. The cat cracker has provided us with a greatly improved octane potential. Today we are marketing premium and regular gasolines with octane ratings which rank among the highest in the country. As a plus feature, the UOP Fluid Catalytic Cracking unit has given us an improved realization for the middle of the barrel. We are producing one new product from the cat cracker, LPG, that we have not previously marketed.

After several months of operation, I can say that our original assumptions in the selection of the UOP Cat Cracker have been justified. Since our start-up we have consistently operated at design capacity or above, and our yields have been better than UOP's estimates.

For the future . . .

Our 55th anniversary came at a time when, undoubtedly, more is expected from petroleum products than at any other year in our history. Over the years, we have developed a reputation for product quality which we have maintained through the application of the very latest refining technology. At United we use to maximum advantage both the processing know-how of our many years in the refinery business and the technology researched, developed, and made available to us by refinery specialists such as Universal Oil Products Company. In the future we will continue to operate in this tradition.



Fractionation column and cat cracker at United Refining Company, Warren, Pennsylvania.

Good Wells Make Good News

A Monthly Report of Successful Well Treatments

July 11, 1958

For over-all fracturing economy—including first cost, time of payout, rate of decline, and frequency of workovers—it will pay you to consider Dowell's fracturing services. Here are some recent studies of Dowell fracturing results:

- **Beaver County, Oklahoma.** (New Gas Well) Completed through perforations into the Hoover formation, 4420 to 4467 feet, this well came in natural with a potential of 4190 mcfd. The well was broken down and treated with 500 gallons Mud Acid, followed by 500 gallons Dowell acid with demulsifying and silicate control agents added. This increased potential production to 6360 mcfd. Then the well was fractured with Petrojel*, using 30,000 gallons of gelled crude with 80,000 pounds of sand plus F.L.A.* (Fluid Loss Additive). The average injection rate was 54.2 bpm. After treatment and clean-up, the well was given a four point test which showed an *open flow potential of 126 mmcfd.*

- **Christian County, Illinois.** (New Oil Well) This well was completed open hole in the Silurian dolomite from 1910 feet to 1921 feet. Since this was known to be a problem reservoir, the operator had formation samples tested. He found that the formation reacted twice as fast with intensified acid as it did with regular acid. Accordingly, he ordered Acid Petrofrac* with Dowell's intensifying agent added. 7000 gallons of acid-oil emulsion and 7000 pounds of sand were used. Freflo* in oil and 500 gallons Dowell Silicate Control Acid preceded the Acid Petrofrac. *After the well returned the load oil, the sustained production was 15 boph.*

- **Hot Springs County, Wyoming.** (Old Oil Well) This well was completed open hole, 3495 to 3562 feet, in the Phosphoria lime. This dense formation has some natural fractures and minor effective vugs. Before treatment, production had declined to 8 bopd. Operator ordered Acid Petrofrac, using 5000 gallons acid-oil emulsion and 5000 pounds sand. F.L.A. was added to the fracturing fluid to help extend the fractures and the drainage area of the well. Treatment was performed down tubing at 9 bpm. *45 days after treatment well was producing 70 bpd with two per cent water.*

- **Harrison County, East Texas.** (Old Oil Well) This well, completed through perforations into the Travis Peak sand, 6272 to 6276 feet, had declined to 25 bopd. Operator wanted to stimulate potential so he could get full allowable for eight-day production. Petrojel was selected, using 5000 gallons gelled crude with 5000 pounds sand. Injection was down tubing at 8 bpm. *After treatment settled production was 273 bopd.*

You have an intimate knowledge of *your* production problems and *your* well's characteristics. Likewise, your Dowell engineer knows what each of the many Dowell fracturing services is designed to do. He will work closely with you to help you get the most from a stimulation treatment. For service call any of the 165 Dowell service points and offices. In Canada, contact Dowell of Canada, Ltd.; in Venezuela, contact United Oilwell Service. Or write Dowell, Tulsa 1, Oklahoma.

*Dowell Trademark

Services for the oil industry DOWELL

A SERVICE DIVISION OF THE DOW CHEMICAL COMPANY

60-Second Summary / WHAT'S HAPPENING IN OIL

AT-A-GLANCE PETROLEUM WEEK Copyright

July 11, 1958

dept/INDEX

Production	32
Transportation	60
Processing	55
Marketing	83
Washington	30
Statistics	79
The Market Trend	80
Key Prices	81
Editorial	96
International	68
Economics	77
Letters	49
Personals	92
Service & Equipment	88

Some key economic indicators point to a brighter second half. Industrial production, home building, and heavy engineering construction are turning up after a long decline. Also, employment and personal incomes are rising. . . . p. 77

•

The Texas allowable appears headed higher for August. Strict limitations on output have cut supply to the extent that Four Corners crude now is being moved as far east as the Ohio Valley. . . . p. 25

•

Construction has started on a 55⅛-in. pipeline—the world's largest—in the Pittsburgh area. It will handle coke-oven gas between several U.S. Steel plants. . . . p. 60

•

A Senate floor fight may result over mandatory controls on imports. Sen. Russell Long—supported by 17 other senators—is threatening to take his fight to the floor unless the Senate Finance Committee writes his mandatory control amendment into the Reciprocal Trade Bill. . . . p. 25

•

"Lost" oil drums are a major financial headache in South Africa. Some 750,000 (worth $10 each) have been written off after conversion for "household" use. . . . p. 83

•

Petroleos Mexicanos urgently needs working capital to keep pace with Mexico's industrial boom. Pemex hints U.S. Government financing would be welcomed, but so far the U.S. has opposed aid to nationalized oil operations. . . . p. 68

•

Weather damage to offshore rigs can be reduced, says a New Orleans engineering firm. It has developed a guide to govern platform heights above the waterline for "safe" operating conditions. . . . p. 38

•

Atomic energy's impact on oil is expected to be small—even by 1980. That's the finding of a study by the National Planning Assn., which predicts that use of nuclear energy may even stimulate demand for oil products as a result of greater industrial activity. . . . p. 23

•

Computing centers are springing up to analyze seismic data. They are an outgrowth of the wider use of magnetic tape to record geophysical information. . . . p. 32

•

New tools are available to trim evaporation losses. Several companies report reductions of up to 85% for working crude and 95% for static crude storage. . . . p. 55

Up to the Minute

SIGNIFICANT LATE NEWS

AT-A-GLANCE PETROLEUM WEEK Copyright

July 11, 1958

The voluntary import plan has passed one court test, but there is more to come. Eastern States Petroleum & Chemical Corp. failed to get a temporary injunction this week to halt the program. Federal District Judge Alexander Holtzoff ruled that the government is within its rights to enforce provisions of the Buy American Act on its petroleum purchases from companies not complying with import quotas.

A second test may come soon in the U. S. Court of Appeals. Eastern States received a final ruling on its petition, avoiding a trial. Lawyers say the way is now clear for an appeal on the district court's hearing—not the merits of the case. Such a maneuver is designed to win an injunction in the appeals court to halt the plan.

•

Export capacity from Iraq will be hiked to meet the government's demand for more revenue. An artificial island will be built in the Persian Gulf by 1960 to load large tankers. It will be fed by two 32-in. submarine pipelines.

•

Phillips Petroleum now has both the deepest and the second-deepest holes ever drilled. Its No. 1-EE University, in Pecos County, West Texas, is drilling below 23,647 ft. in the Simpson toward a planned 25,000-ft. depth. Its No. 1-A Montgomery, 8 mi. southwest of the record holder, is drilling below 22,954 ft. in the Ellenburger, surpassing the previous record set by Richardson & Bass' 22,570-ft. test in Louisiana.

A third Phillips deep test, No. 1-Harral, 6 mi. southeast of the No. 1-EE, reached 19,020 ft. this week, and 5½-in. casing is being set.

•

Russia is claiming successful tests for a new 4-in. turbodrill. A Soviet newspaper says the drill, with a diameter about half that of turbodrills "now being produced," develops almost twice as large a load on its bit. The drill reportedly has a mechanical drilling speed one-third higher than "usual speeds."

•

Two more companies want to make triple completions of oil wells in Texas. Pan American Petroleum Corp. applied for such a completion for its No. 31-A Sealy Smith Foundation in the North Monahans field area of Winkler County. The Texas Co. wants to make a triple completion for its No. 3 Hogg in the same field. Both would be completed in the Devonian, Fusselman, and Ellenburger formations. The first triple completion was the David and Inez G. Fasken No. 2-J Fee, Fasken fields area, Andrews County (PW—Jul.4'58,p26).

•

A Japanese group wants to work with the Indonesian Government to produce North Sumatran oil. The former Royal Dutch Shell properties, "nationalized" early this year, reportedly produce 5,000 b/d. Maruzen Oil Co. and others are seeking Japanese Government approval to offer Indonesia $50-million worth of coastal vessels for a 10-year agreement to produce and export 20,000 b/d.

Ability to SELL IDEAS!

. . . engineering boldness that conveys conviction

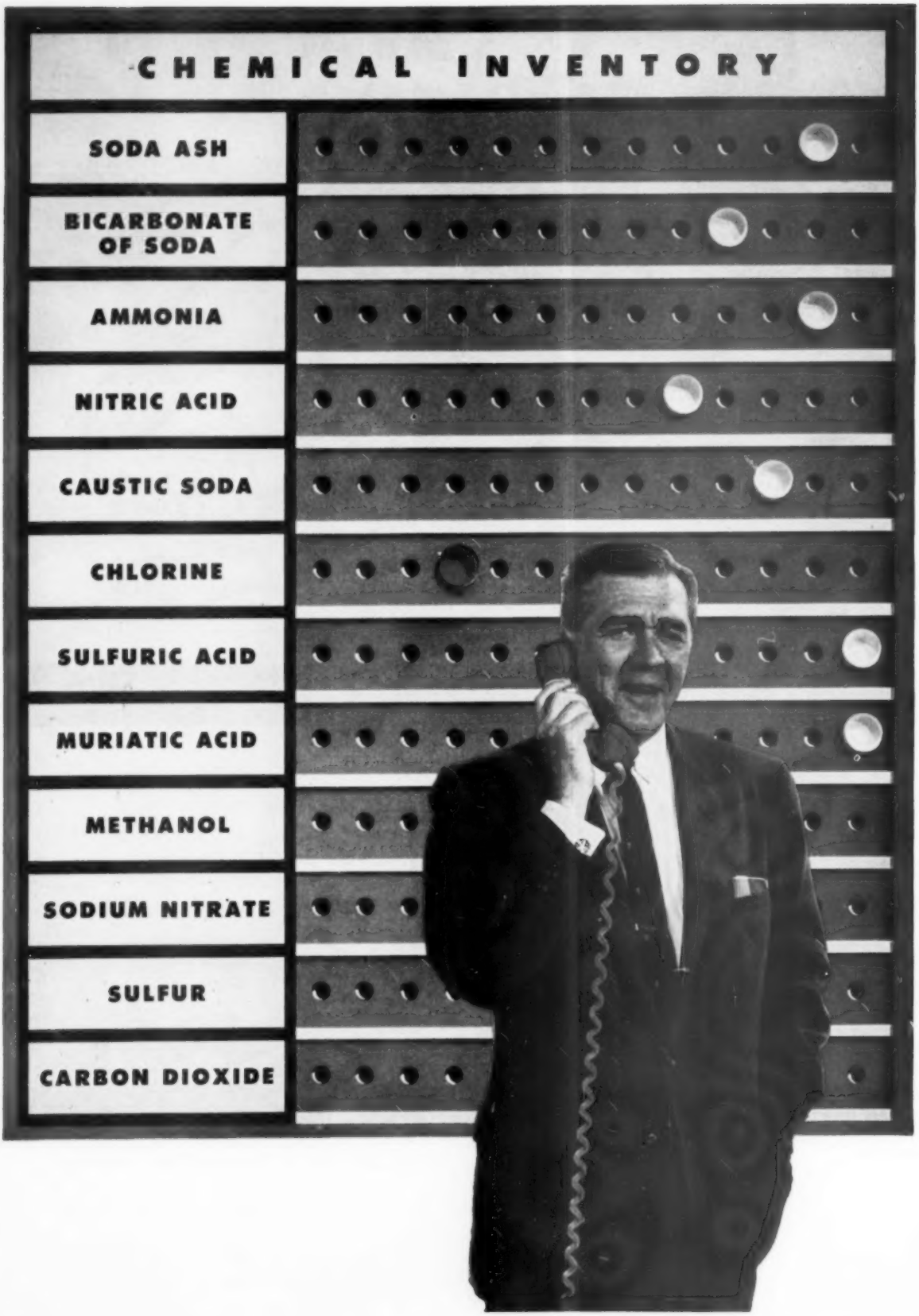
APPROACHES are tunnels or trestles. Engineering accomplishes either.
But, Fish builds other approaches . . . the groundwork
that "sells" industrial undertakings to fit economic patterns
in the oil, gas, and chemical industries.

The men at Fish are engineers, contractors, designers,
market analysts . . . sellers. Their unparalleled power
to communicate carries conviction to peoples or public agencies.

The right approach is an element of bold engineering
to facilitate mighty achievement in industry.

THE FISH ENGINEERING CORPORATION
HOUSTON
AND ASSOCIATED COMPANIES

FISH SERVICE CORPORATION • FISH NORTHWEST CONSTRUCTORS, INC.


CHEMICAL INVENTORY
SODA ASH
BICARBONATE OF SODA
AMMONIA
NITRIC ACID
CAUSTIC SODA
CHLORINE
SULFURIC ACID
MURIATIC ACID
METHANOL
SODIUM NITRATE
SULFUR
CARBON DIOXIDE

to pull money from inventory...

call Olin Mathieson

Balance of raw materials inventory is often the difference between a favorable and unfavorable cash position. To help you maintain optimum levels, Olin Mathieson offers important services and facilities.

RESOURCES. Shorter in-transit time and smaller accounts payable are likely benefits from our multiple producing and shipping points.

ACTION. Alert attention will activate your orders in minimum time through our high-speed private-wire system. An emergency can often be handled by chemicals in transit.

PLANNING. A business of chemicals service for over 60 years, Olin Mathieson provides a wide range of experience applicable to your own situation.

We invite your close examination of our methods of supply. You may find important advantages in dealing with your inventory problems. Talk it over with your purchasing department today—then call Olin Mathieson Chemical Corporation, Industrial Chemicals, Baltimore 3, Maryland.

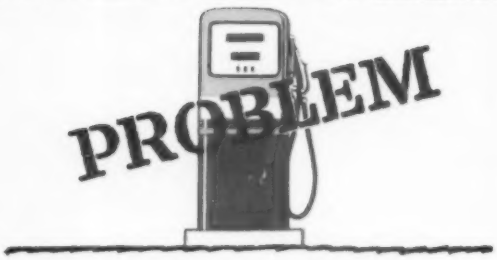
OLIN MATHIESON CHEMICAL CORPORATION — MATHIESON

MATHIESON CHEMICALS

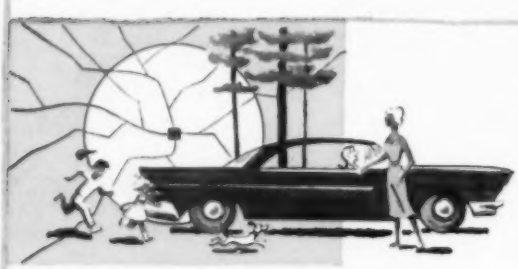
6098

MARKET EXPANSION

. . . the object of Ethyl's continuing advertising and publicity

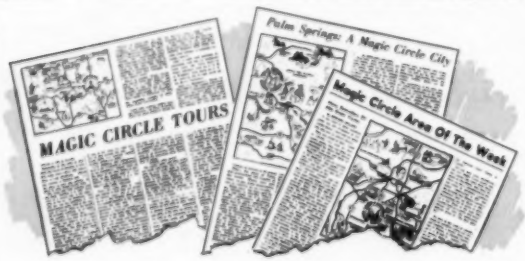


1. Ethyl's continuing market expansion program, now in its fourth year, has never been more important than it is right now — when the industry has a sales problem.



2. "Drive more . . . it's fun to explore your Magic Circle." This is Ethyl's message to motorists in national advertising—a powerful new campaign to stimulate more pleasure driving.

3. In Life, Post, Look and Sunset, Ethyl's colorful Magic Circle advertising reaches millions of motorists—showing them "get out and have fun" ideas for more family driving.



4. Equally important, Ethyl's "Magic Circle Travel Clinic"—a weekly travel service feature in newspapers—is encouraging people everywhere to do more casual driving.

5. In short, this Magic Circle campaign is working hard to expand the market for the products of the oil industry . . . not just gasoline, but *everything sold at service stations.*

This market expansion campaign is a service to the oil industry . . . typifying Ethyl's belief that service is just as important as product.

ETHYL
ANTIKNOCK COMPOUND
ETHYL CORPORATION

ETHYL CORPORATION

NEW YORK 17, N. Y.

Atomic Energy: No Real Threat to Oil

● **By 1980, nuclear energy will capture only 5% of the market that would be supplied by oil, a study shows.**

By 1980, atomic energy will capture, 1,123,000 b/d—or roughly 5%—of the market which otherwise would go to oil. That's the prediction made by the National Planning Assn. in a study released this week.

NPA, a nonprofit organization dedicated to the idea that private economic planning is essential to orderly economic growth, has been studying the prospective impact of nuclear energy since 1953.

The association's 17-man special policy committee on the productive uses of nuclear energy, which guided the studies, includes such diverse members as Walter J. Levy, a petroleum consultant of New York; Henry D. Smyth, of Princeton University, former atomic energy commissioner; and Peter Henle, of the AFL-CIO.

Several other studies have projected oil supply and demand, and the outlook for competitive nuclear power. But this is the first comprehensive investigation into atomic energy's impact on oil and gas market prospects.

The document is bound to be cited in future controversies over conservation laws, oil import restrictions, percentage depletion, and natural gas legislation.

And, if NPA's predictions come true, the refining, transportation, and marketing segments of the petroleum industry face 44 major changes as the result of atomic power.

Economist Perry D. Teitelbaum, author of the NPA report, concedes that any study looking 25 years or so ahead is "educated guessing."

In the next two or three decades, nuclear energy will be used for electric power generation, production of industrial process heat, ocean-shipping propulsion, and perhaps railroad locomotion. Even so, it will put only a small dent in the mushrooming demand for oil and gas.

NPA estimates that total U.S. energy requirements will double by 1980.

"Since no single energy source will be able to satisfy all of the projected needs," says the study, "it follows that nuclear energy cannot . . . by itself, provide a long-run solution to our expanding energy requirements."

Thus, the U.S. situation differs sharply from that in Europe. There, high fuel costs and increasing dependence on Middle Eastern oil have led to the policy decision that nuclear power must meet most of the increased energy requirements after 1963.

In Teitelbaum's view, the great lesson of the new study is this:

"Atomic energy will be important in 25 years, but its contribution to the energy picture will still be marginal. We should devote ourselves to the most economic exploitation of conventional and synthetic fuels. They will be around for a long time."

In the U.S., NPA expects atomic energy to account for less than 10% of total energy requirements by 1980.

Natural gas' slice of the swelling U.S. energy pie is estimated at 23.1% in 1980—a slight comedown from the 26.7% figure in 1955.

Petroleum's share, on the other hand, is seen growing from 41.1% of the market in 1955 to 41.5% in 1980, when oil consumption is estimated at 16-million b/d.

Even so, NPA says atomic energy will displace 410-million bbl. of oil and 538-billion cu. ft. of natural gas annually by 1980.

Nuclear energy's only major inroads will come in the boiler fuel market. And even here, the oil industry's loss will be more or less "voluntary."

Out of the total 410-million bbl. annually to be displaced by 1980, half will be accounted for by electric power generation and industrial process heat, according to NPA.

Naval and maritime atomic vessels will account for much of the remaining "lost" oil market, with locomotives and other miscellaneous uses accounting for the rest.

Bituminous coal, in most areas of the U.S., is the predominant boiler fuel. NPA says that—atomic power or not—coal's dominance will increase as natural gas becomes too valuable to use under boilers, and refiners show less and less interest in producing residual fuel oil.

"Thus, nuclear energy may replace only foreign fuel oil," says NPA. "And even if domestic fuel oil were replaced, little or no decline need result in domestic crude production, since the fuel oil would be upgraded at refineries, thus displacing lighter fractions from foreign crude."

Atomic energy, however, is seen displacing one-sixth of what the coal industry's market would otherwise be.

NPA's experts have little patience with any notion that we are running out of oil. Even more interesting, they foresee only a "moderate increase" in the price of crude and products by 1980.

The NPA committee starts right out with the assumption that Middle Eastern crude will continue to be available. Otherwise, the reasoning goes, the U.S. would probably go to war.

However, the study makes the point that this country's reserves of petroleum—supplemented by oil shale, gasified coal, and perhaps oil from Canada's tar sands—are so vast that we need never run out of fuel if we're willing to offer the incentive of a higher price.

Government data indicates, says NPA, that U.S. coal reserves total 943-billion tons. (Present consumption is half a billion tons annually.)

Talk of "proved" petroleum reserves means little, says the study, since these figures reflect only how much oil is available in a given price range.

Thus, although so-called "proved" reserves of crude and gas liquids are only 35-billion bbl. or so, the study claims another 184-billion bbl. could be produced at a higher price and with more economic oil recovery methods.

In addition, NPA quotes estimates that oil shale reserves total 900-billion bbl.—of which 45-billion are described as recoverable at present prices with existing techniques.

The study assumes that oil import restrictions will be gradually eased. The availability of foreign oil—plus the potential use of synthetic fuels—will act as "a final bar to anything more than a moderate price increase" during the next 25 years, in NPA's view.

The increase over current prices for crude and products is not expected to

exceed 15% to 25%, discounting inflation or deflation of the economy as a whole.

Coal prices are expected to follow roughly the same trend.

Average natural gas prices, on the other hand, are seen increasing until they reach a level comparable with those of fuel oil and coal. New contracts are already approaching this level.

With oil and coal still plentiful at reasonable prices, it follows that nuclear energy must get much cheaper to compete. This NPA conclusion will jar atomic power enthusiasts, who have assumed that ever-rising costs of conventional fuels would help put them in business.

"I'm personally convinced that the atomic industry will lower its costs sufficiently to compete," says one economist who worked on the study. "But these people may as well realize they have to compete on the oil and coal industries' terms—not on their own."

A major effect of atomic power will be to erase regional differences in the cost of energy. This means large oil-producing states such as Texas and Louisiana could find it increasingly tough to lure industry from energy-poor regions.

Nuclear power costs as much—or as little—in one place as another.

Thus it will be a boon to areas like New England, where power-generation costs are four to six times as high as in Texas—and one and a half times the national average.

Atomic power will go first to areas such as that. Then, as costs decrease, it will displace natural gas and fuel oil used under boilers even in oil states.

As energy costs equalize, even industries with high energy needs will decide plant location on the basis of factors other than fuel cost—availability of raw materials, nearness to market, and the labor supply.

However, the experts emphasize that the regional impact will be gradual—and won't necessarily hurt energy-producing regions anyway. For example, the report says:

"An Atlantic or Gulf Coast iron and steel complex in 1975 or 1980, using nuclear heat and situated close to major markets, might compete successfully with more conventionally located capacity along the Great Lakes."

Industrial activity born from nuclear power thus might stimulate ever larger demand for petroleum products.

Miscible Test Shows Improved Recovery

The miscible gas supplemental recovery technique made significant news last week when "very encouraging" results were reported on Humble Oil & Refining Co.'s Seeligson field experimental program.

The program began Mar. 19, 1957, in zone 20B-07 of the field in Jim Wells and Kleberg Counties, Tex., involving the injection of propane and dry gas.

Humble has now asked the Texas Railroad Commission for an allowable of 1,000 b/d in order to make a more rapid evaluation of the program (PW—Jul.4'58,p6).

There are indications that close to 100% sweep efficiency might be possible, bolstering previous laboratory findings by actual field performance.

Immediately prior to the start of the program, the well selected as the injection well—K. R. Seeligson C-88T—was potentialed.

It produced 44-gravity oil at the rate of 122 b/d, with a gas-oil ratio of 12,197 to 1, definitely proving the presence of significant oil saturation in this vicinity.

In order to determine the performance of the enriched gas-dry gas drive, Humble drilled a core test well (K. R. Seeligson C-170) in December, 1957, topping the sand at 6,100 ft., 120 ft. east of the injection well.

Drillstem tests recovered no oil in the core well, indicating excellent sweep efficiency.

However, Humble pointed out that certain factors must still be examined before the feasibility of applying the technique to petroleum reservoirs in general can be finally determined.

Larry Rawl, Humble district reservoir engineer, says further field experimentation is necessary to pin down such unknowns or uncertainties as: (1) recovery under actual operating conditions; (2) the effect of gravity segregation; (3) the effect of the varying permeability profile found in most producing reservoirs; (4) the tendency of the injected gas to "finger" or "cone" due to reservoir pressure gradients; and (5) the pattern efficiency that can be expected.

Rawls adds that lab experiments had pointed to the use of 50% propane and 50% separator gas as the most promising recovery drive combination. The mixture used at Seeligson so far has been 51.1% propane and the rest dry gas.

The Seeligson reservoir appeared ideal for the experiment for several reasons.

Zone 20B-07 was selected because: (1) the reservoir size would permit early evaluation; (2) it had good geologic control; (3) there was comparitively uniform sand development; (4) there was uniform configuration of the bounded reservoir; (5) the reservoir was completely developed; (6) the solution gas primary drive mechanism promised only a low recovery; (7) the reservoir was in the flush production stage, and excessively high gas saturations were absent; and (8) the reservoir was 100% Humble-operated, with only one royalty owner involved.

So far, Humble has pushed 447,276 bbl. of propane into the reservoir, plus some 656,530,000 cu. ft. of dry gas. Cumulative oil production amounts to 254,939 bbl.

There are two injection wells, K. R. Seeligson C-88T and C-90T, and 12 producing wells.

Bottomhole pressure has gone up from 2,370 psi. to 2,670 psi., and average oil production has ranged from 777 b/d to 384 b/d.

Cumulative gas production since the program started has been 250,705,000 cu. ft., while the total amount of gas injected so far, including both propane and dry gas, totals 1,341,266,000 cu. ft.

Water production so far has been negligible.

To May 1, 1958, total cumulative oil production, including the period of the experiment, was 978,235 bbl.

NEXT WEEK in Petroleum Week

What impact has the business slump had on the producing segment of the oil industry? How are operators meeting the challenge of lower demand and higher costs? Are any significant trends under way?

Answers to these and many other important questions will be found in the Special Report on Production in next week's issue.

Four Corners oil moving east means . . .

Texas May Raise Allowable for August

Four Corners crude is now moving to the Gulf Coast, and as far eastward as the Ohio Valley, to fill the gap in supply caused by the continued tight allowables in Texas.

The Texas-New Mexico Pipe Line Co.'s 515-mi., 16-in. line from the Four Corners area to Jal, N. M., started up late last month at capacity of 50,000 b/d.

The Texas Co., major stockholder in the pipeline, is moving about 20,000 b/d through the system, which connects at Jal with major trunk lines to the Gulf Coast, the Mid-Continent, and the Midwest.

And a half-dozen other large companies are moving another 30,000 b/d through the line to the Gulf Coast and the Ohio Valley.

In addition to the Four Corners oil, at least one major is moving "substantial" quantities of Oklahoma crude to its Houston refinery.

The gap that this leaves in that company's supply elsewhere is being filled by shipments from the Rocky Mountains.

The demand for additional oil in Texas and elsewhere east of the Rockies is certain to lead both purchasers and producers to press for another increase in the allowable at the Railroad Commission's hearing next Thursday.

The commission added one day for July, placing most fields on a nine-day schedule, following three months of eight-day producing schedules.

One additional producing day for August would hike the Texas allowable by about 170,000 b/d. A two-day increase to an 11-day schedule, which would be the highest producing-day schedule since February, would add about 340,000 b/d to the allowable.

A least one member of the commission is in favor of a higher allowable in Texas in August.

Ernest O. Thompson, senior member, said that, in view of the success of the industry in reducing inventories, it "would seem entirely possible . . . that Texas's producing days can be increased in August." It is now time, Thompson noted, to build up production to meet the heavier winter demand.

"When storage of oil above ground has been reduced to adequate working levels," Thompson added, "then current demand for oil can and should be met with and by current production."

Actually, stocks of crude east of the Rockies are now below so-called adequate working levels, in the opinion of many industry officials.

They say that 220-million bbl. of crude in storage and pipeline fill is needed to provide adequate working stocks east of the Rockies. At the end of June, the crude stocks east of the Rockies were down to 212-million bbl.

Some Texas producers foresee the "invasion" of Four Corners crude into their traditional markets as a serious threat to their long-term stability.

The owners of the Texas-New Mexico Pipe Line—Texaco, Sinclair, Tidewater, and Cities Service—are all major purchasers in Texas.

The Texas producers fear a repeat of the situation that developed with the completion of pipeline outlets for Rocky Mountain crude to the Midwest.

At first, only one line connected the two areas. But others were soon added.

Work is already under way to boost the capacity of the pipeline from the Four Corners to Jal, N. M., to 66,000 b/d.

Four standby pumping units will be put in service to provide the 16,000 b/d increase in capacity.

Senate Fight Looms on Imports

Sen. Russell Long is threatening a floor fight in the Senate over mandatory imports controls.

The Louisiana Democrat says he will make mandatory controls an issue if the Senate Finance Committee turns down his move to tack such restrictions on the pending Reciprocal Trade Bill.

Long's control amendment is essentially the same as the restrictions contained in the Ikard bill, which was

New West Coast Crude Import Quotas

(Thousands of Barrels Daily)

Company	Pres. Alloc.	Effec. Date	New Allocations 7-1-58	8-1-58	9-1-58	10-1-58	11-1-58
Bankline Oil Co.	—	6-17-58	2.3	2.3	2.3	2.3	2.3
Caminol Company	3.0		2.9	2.9	2.8	2.8	2.8
Century Oil Co.	—	8-27-58	—	—	1.5	1.5	1.5
Douglas Oil Co. of Calif.	4.7		4.6	4.5	4.4	4.4	4.4
Edgington Oil Ref., Inc.	3.0		2.9	2.9	2.8	2.8	2.8
Envoy Petroleum Co.	—	8-17-58	—	—	1.2	1.2	1.2
Fletcher Oil Co.	5.5		5.3	5.3	5.2	5.2	5.2
General Petr. Corp.	25.5		24.8	24.5	24.1	24.0	23.9
Golden Eagle Ref. Co., Inc.	—	7-10-58	—	2.3	2.3	2.3	2.3
Hancock Oil Co.	3.0		4.0	4.0	4.0	4.0	4.0
Manespo Ref. Co.	—	8-13-58	—	—	1.4	1.4	1.4
Macmillan Petr. Corp.	2.5		2.4	2.4	2.3	2.3	2.3
Mohawk Petr. Corp.	3.1		3.0	3.0	2.9	2.9	2.9
Palomar Oil & Ref. Corp.	—	10-14-58	—	—	—	—	0.5
Richfield Oil Corp.	9.1		8.9	8.8	8.6	8.5	8.5
Rothschild Oil Co.	—	6-24-58	2.7	2.7	2.7	2.7	2.7
Shell Oil Co.	32.5		31.6	31.3	30.7	30.5	30.4
Socal Oil & Ref. Co.	—	9-14-58	—	—	—	1.0	1.0
Standard Oil Co. of Calif.	29.7		28.9	28.5	28.0	27.9	27.8
Sunland Ref. Corp.	2.5		2.4	2.4	2.3	2.3	2.3
The Texas Company	20.6		20.0	19.8	19.4	19.4	19.3
Tidewater Oil Co.	37.9		36.9	36.5	35.8	35.6	35.5
Union Oil Co. of Calif.	12.4		12.1	11.9	11.7	11.6	11.6
U.S. Oil & Ref. Co.	8.0		7.8	7.7	7.6	7.5	7.5
Wilshire Oil Co.	18.1		17.6	17.4	17.1	17.0	17.0
TOTALS	221.1		221.1	221.1	221.1	221.1	221.1

pushed without success in the House.

The trade bill may be taken up next on the Senate floor. And unlike the House, the Senate will have no closed rule on debate when the trade bill showdown comes.

And while the debate continues over the pros and cons of mandatory controls, the Administration continues to juggle the voluntary control program—this time on the West Coast.

Long-expected, the juggling maintains the status quo of 221,000 b/d for crude imports into District V. But the total permissible under the voluntary plan has been divided up a bit more to make room for eight newcomers.

New companies given allocations are Century Oil Co., Envoy Petroleum Co., Bankline Oil Co., Golden Eagle Refining Co., Socal Oil & Refining Co., Manespo Refining Co., Palomar Oil & Refining Co., and Rothschild Oil Co. The new authorizations total 12,900 b/d (table, page 25).

The Cabinet committee on oil imports, with President Eisenhower's approval, also granted an extra 1,000 b/d in crude oil imports to Hancock Oil Co.

Companies already importing to the West Coast will gradually reduce their volumes between now and Nov. 1 to make room for the newcomers.

Effective dates for admission of new companies to the program have been staggered through October.

Cutbacks will average about 6.2% by November for the 17 companies affected by the new order.

The Cabinet committee noted that crude imports in District V have been averaging less than the limit, but refused to lower the 221,000 b/d level for fear that supply then might fail to meet demand for gasoline and other light products.

Most West Coast importers had announced by mid-week that they would comply with the new restrictions.

The government's criteria for compliance with the imports program have been revised, too, for the West Coast.

The new District V allocations brought these changes in compliance rules:

Until Aug. 1, a District V importer will be in compliance with the program if his average crude oil imports through June 30 didn't exceed his allocation, or if his imports for three months preceding a government bid opening were not greater than his allocation.

A new section of the rules applies to bids opened in August. To gain three-month compliance and qualify for August bids, an importer must have stayed within his allocation in May, June, and July. Or the importer can qualify if his over-all imports average through June has been in line and his July imports do not exceed his allocation.

An importer will be in compliance on September bid openings if his June-through-August imports are not in excess of his allocation; or his average through June is within his allocation and his July and August imports within the levels for those months.

For bid openings in October and thereafter, District V importers will be in compliance only if their average imports for the previous three months are within their average allocation for that period.

Another rule change permits Matthew V. Carson, the imports administrator, to relax his compliance regulations if he thinks a company's average was due mainly to scheduling and transportation troubles.

In another imports action, the Interior Dept. polished up its definitions of unfinished oils, but planned to ask comments from importers before making the definitions final.

After the unfinished products are properly defined, the next step will be to establish a system of allocations for importers of those products.

Oil Man's Album

Texas Oil Men Weren't Overly Modest Back in 1895, Either

It was a great day in Corsicana when the first carload of Texas crude was shipped from the famous Corsicana field. The field is still producing, almost proving the claim of "quantity unlimited." The first refinery in the Southwest was built in this field in 1898 by Magnolia Petroleum Co.

(No. 14 in a Petroleum Week series)

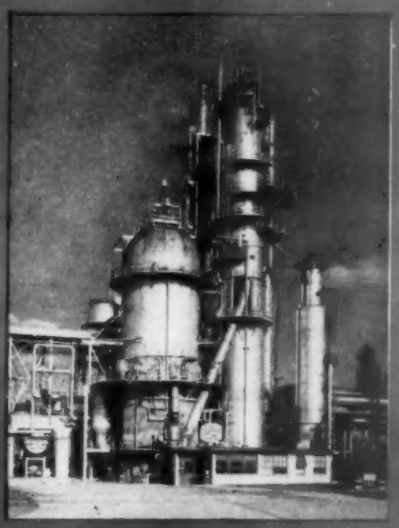
HAMMOND

STORAGE TANKS and PLATE FABRICATION

BALLFT* tank with vapor saver diaphragm

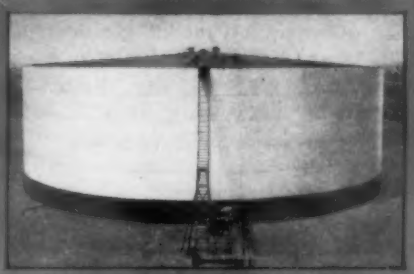
Hammond Spheres

Hammond TUBESEAL* and SPRINGTITE* Floating Roof Tanks



Process Vessels—Steel • Stainless • Alloys • Cladmetals

Water Storage Tanks



Cone Roof Tanks

The universal acceptance of Hammond-built equipment is the result of more than half a century of experience in the design, fabrication and erection of storage tanks, process vessels and steel plate construction for the petroleum, chemical and allied industries, and for water supply.

HAMMOND IRON WORKS

WARREN and BRISTOL, PA. • PROVO, UTAH • CASPER, WYO. • BIRMINGHAM, ALA.

Sales Offices:

NEWARK 2, N. J. • PITTSBURGH, PA. • BOSTON 10, MASS. • BRIDGEPORT, CONN. • CINCINNATI 2, OHIO
CHICAGO 2, ILL. • ARLINGTON, VA. • GREENVILLE, S. C. • LOS ANGELES 57, CALIF. • MEXICO CITY
"TIPSA," BUENOS AIRES • PORT-AU-PRINCE, HAITI • LIMA, PERU

Licensees: CALIFORNIA, CANADA, ENGLAND, BELGIUM, GERMANY, ITALY, FRANCE, AUSTRALIA, JAPAN, THE NETHERLANDS, COLOMBIA, BRAZIL

*patented

HAMONDTANK

What's New / IN THE INDUSTRY

Movement of natural gas liquids from Western Canada to the Pacific Coast has been proposed by Foothills Products Pipe Line, Ltd., a new company "sponsored" by Pembina Pipe Line, Ltd. Foothills is proposing an $80-million line to make "liquid byproducts from present and future Alberta gas fields" available to West Coast and world markets.

•

Jersey Standard wants to increase its ownership of its affiliate, Humble Oil & Refining Co. Last week Jersey moved to acquire outstanding minority interests in Humble, the biggest crude producer in the U.S. The parent company is offering five shares of its stock for four shares of Humble.

•

Another major expansion of a midwest gas transmission system is in the works. Trunkline Gas Co. last week asked for a Federal Power Commission approval of a plan to increase its capacity by 135-million cu. ft. a day. The company also wants to extend its system from central Illinois to the Indiana-Michigan border.

•

An oil "facts agency" is being opened in Canada, too. The Canadian Petroleum Assn. will open a special office in Ottawa about Sept. 1 to give "more thorough interpretation" of the scope of the exploration and development phases of the Canadian oil and gas industry. The American Petroleum Institute recently set up a similar agency.

•

An experimental plant for getting oil from tar sand may go into operation sometime this month. Union Oil Co. of California says that its plant, located in Santa Barbara County, is nearing completion and will be put into operation as soon as possible. Purpose of the plant will be to explore the feasibility of profitable extraction of oil from the large deposits of sisquoc tar sands existing in that area.

•

Morocco expects to put a new 50-50 oil law into effect this month to attract more foreign oil capital. The Ministry of Economy has submitted a draft law to the cabinet providing for liberal 12-year exploration rights and 50-year development concessions. Morocco's present oil operations are confined to its northern area.

•

A. S. Onassis, who had to back down on commitments to build supertankers in the U.S., is building a 65,000-tonner in West Germany. Onassis recently told a Congressional investigating committee that present tanker charter rates make building two 46,000-ton tankers and one 106,500-tonner, which he owes to the Maritime Administration, impracticable (PW—Jun.23'58,p6).

•

J. P. Gasser has been elected an executive vice-president of Dresser Industries. He formerly was executive vice-president of Seaboard Oil Co. As one of three executive vice-presidents, Gasser will direct activities of Lane-Wells, Ideco, Magnet Cove Barium, Security Engineering, Well Surveys, Dresser Dynamics, Southwestern Industrial Electronics, Hermetic Seal Transformer, and the Turbodrill Division.

INSIDE *Slant*

IT COULD HAPPEN

Strange as it may seem, there could be a shortage of oil country tubular goods in the fourth quarter.

There was considerable discussion of this possibility during last week's annual meeting of the Petroleum Equipment Suppliers Assn., at Quebec, Canada.

None thought the shortage would result from any sudden upsurge in drilling, even though they did see some betterment in this situation.

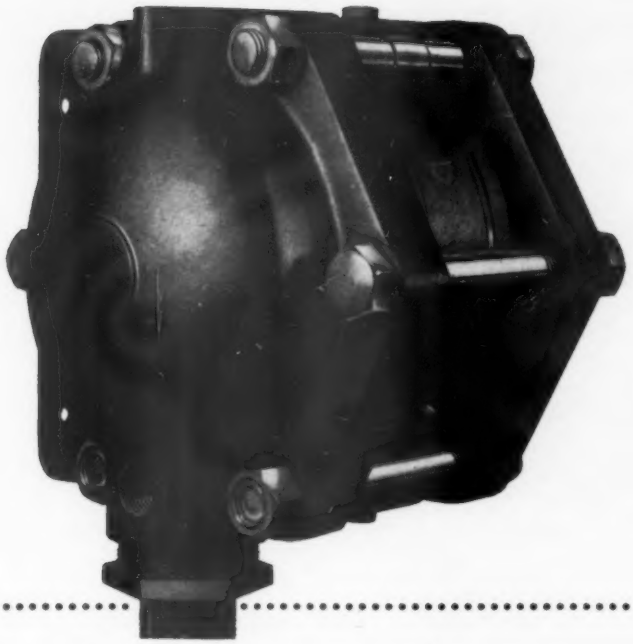
The key to the entire shortage possibility is the fact that the industry—both the consumer and the supplier or manufacturer—has been living off inventories too long.

As a result, the majority of consumers—the oil producers—have pulled their stocks down drastically. And because the producers have been drawing on inventories, the pipe mills have slowed operations.

But what has been overlooked is that, while the number of tests drilled is down considerably, there is only a small decline in total footage. The trend toward deeper drilling accounts for this.

Therefore, if the historical increase in drilling occurs in the fourth quarter, the producers could find themselves searching for pipe again, particularly for some sizes.

Leroy Menzing
EDITOR



No other flow meter gives you the accuracy, convenience and economy of the new Honeywell Bellows Flow Meter

- **Calibrated accuracy ± 0.5% of full scale**
- **Leakproof between liquid fill and process fluid**
- **No mercury to contaminate process fluid**
- **No zero shift between —40 and +250°F**
- **Fast range changing in field; choice of fifteen ranges**
- **High corrosion resistance**
- **Fast, accurate damping adjustment**
- **Meter body is self-venting, draining or purging**

Here's the most advanced meter body available today for flow and liquid level metering. You can use it with virtually any process fluid, with combustible fluids, and in hazardous atmospheres. Meter body has connections for either vertical or horizontal piping. Remove it from the system for servicing without disturbing the piping.

Models available in many ranges, for both flow and liquid level measurement and control. Call your nearby Honeywell field engineer for details on the new Honeywell Bellows Meter. He's as near as your phone. Or write for Catalog C22-1.

MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

First in Controls

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
July 11, 1958

The government is taking another look at its shale oil plant in Colorado. The Interior Dept.'s Bureau of Mines has a problem on its hands, now that Union Oil Co. of California has closed its pilot shale plant near Grand Valley, Colo. One possibility is that the government may reopen its plant at Rifle, Colo. or the plant might be leased to a private company. Interior Dept. officials don't want to see the shale oil research program dropped completely.

•

Pentagon fuel buyers are cracking down on small refiners. Under the military buying procedure, small refiners get a special "set-aside" of business. But after complaints that some small companies were buying blending stock from larger refiners, the Military Petroleum Supply Agency issued a new restriction: Small companies that buy blending materials can't sell to the military unless the stock comes from other small refiners.

•

Don't look for any quick Federal Power Commission decision on the Midwestern case. There have been reports that FPC is ready to hurry its ruling on whether Midwestern Gas Transmission Co., a subsidiary of Tennessee Gas Transmission Co., should be allowed to build a new line based partly on Canadian gas supply. But the commission's examiner has not yet ruled. And the full commission will take several months after the examiner's decision before making its own views known.

•

Applications for oil import allocations in Districts I-IV now have risen to 46, and will continue to increase. The new requests now total almost 328,000 b/d—close to a potential 50% increase over the current program's level. Although hearings on these applications won't get started until at least September, there is no doubt that the bulk of the requests will be disallowed.

•

Some Senate members are hoping for an upturn in domestic oil activity within a few months. They point to trade bill testimony by oil industry leaders, particularly that of T. S. Petersen, president of Standard Oil Co. of California. Petersen thinks crude inventories are dropping quickly enough to increase domestic production soon. These senators also believe a revival of general business activity—now predicted by the year's end—should help boost production.

•

Much FPC activity will come to a temporary halt next month. The commission has again decided to suspend all hearings for the month of August, except for emergency situations. The policy of August vacations, now in its fifth year, was adopted at the request of attorneys practicing before FPC.

•

The Justice Dept.'s antimerger case against El Paso Natural Gas Co. is still dragging. The case, prompted by El Paso's acquisition of Pacific Northwest Pipeline Corp., celebrates its first anniversary this month. El Paso is hoping for a decision, but there are doubts the court action will be speeded.

"Wildcats" *are thriving in Canada!*

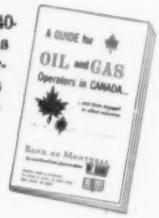
Canadian drilling activity in 1957 was highlighted by five rich wildcat oil strikes in the Virginia Hills section of Alberta and continued success in Pembina. Drilling was also very active in southeastern Saskatchewan which is currently regarded as the "hottest" oil area in Western Canada.

One of the brightest aspects of Canadian oil opportunity to U. S. oilmen is the remarkable success ratio of wildcats to wells brought in—one producing well for each three to four wildcats.

U. S. Oilmen Like To Do Business With the B of M

Over 250 offices of the Bank of Montreal give U. S. and Canadian oilmen day-to-day service in the oil-rich provinces where most of Canada's new drilling activity is now concentrated. The Bank will gladly give you detailed information on any phase of Canadian oil.

"A Guide for Oil and Gas Operators," 40-page brochure published by the B of M, is a basic reference for facts on the ownership and disposition of petroleum rights in the oil provinces. A copy is yours for the asking. Contact John A. Baines, Manager, Oil & Gas Dept., Bank of Montreal, 140 Eighth Avenue West, Calgary, Alberta, Canada. (Telephone AMherst 6-8701).



No Stock Recommendations

While the Bank is prepared to provide all available information on the oil industry, it does not make recommendations regarding the purchase of individual oil stocks.

"MY BANK" TO 2 MILLION CANADIANS
B of M

Head Office: Montreal

BANK OF MONTREAL

Canada's First Bank Coast-to-Coast

District Headquarters: Halifax, Toronto, Winnipeg, Calgary, Vancouver

NEW YORK . . . 64 Wall Street • SAN FRANCISCO . . . 333 California Street

CHICAGO: Special Representative's Office, 141 West Jackson Blvd.

725 BRANCHES ACROSS CANADA • RESOURCES EXCEED $2,800,000,000

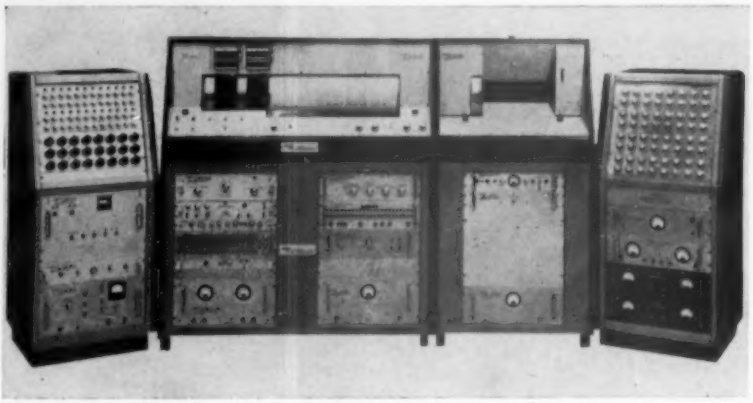
Growing: Seismic Data-Process Centers

The growing use of magnetic tape for seismic work has brought into being a new kind of service—the geophysical data-processing center operated by contractors.

One source estimates that five years ago there were only about five or six data-processing centers of any kind.

Development of magnetic tape recording, however, created the need for such centers. Before this development, interpretations of conventional seismic records were done visually.

As long ago as 1955, it was predicted that the increasing use of magnetic recording would tend to bring about the establishment of "regional electronic centers" (PW—Aug.19'55, p14). This prediction has now been proved correct.



GEODATA SYSTEM, developed by Southwestern Industrial Electronics Co., is an example of the instrumentation that makes up a geophysical data-processing center.

There are now at least 50 data-processing centers—30 in the U.S. and the remainder abroad. Not all of these, however, are contractor-operated.

The bulk of the U.S. centers are located in California, Oklahoma, Texas, Louisiana, Colorado, and New Mexico.

Outside the U.S., there are centers in Canada, Mexico, South America Europe, and the Middle East.

Many of the larger oil companies have established their own data-processing centers. This is also true of some of the larger exploration firms, which use their facilities for themselves and for any customer company employing their seismic crews.

But a growing number of companies that have set up centers for their own work are now also handling similar jobs for others on a contract basis.

And there is at least one firm which is in the business of processing magnetic tapes exclusively for other companies.

Trans-Con Exploration, Inc., of Denver, which processes and interprets magnetic tape for customers only, may be indicative of the direction in which data-processing centers are moving.

Albert Christman, Trans-Con president, explains that his firm does no seismic work of its own. "Our business is solely processing and interpretation," he says.

Christman adds that Trans-Con's investment in equipment, office space, and administrative costs "represents at least $100,000." The equipment, known as the GeoData system, is manufactured by Southwestern Industrial Electronics Co., of Houston, one of the Dresser Industries.

He says this equipment will play back tapes manufactured by SIE and by Techno Instrument Co., of Los Angeles, and is being adapted to handle tape put out by Fortune Electronics, Inc., of Houston.

The processing centers are made up of instruments used in the analysis, processing, and display of magnetic recordings of geophysical data.

Most of these centers can preserve final records of information on magnetic tape for future use, or can duplicate the final record any number of times.

These final records incorporate elevation and weathering corrections, normal moveout corrections, and spread-configuration information.

One of the major reasons contributing to the growth of data-processing centers is that they're often more economical for operators than processing their own tapes.

One California exploration manager says that companies are making use of the centers mainly in areas where they don't do too much work. Therefore, he adds, it's not economic for them to set up their own centers in these areas.

One Oklahoma operator has this to say:

"Since the proper electronic equipment to set up such a processing center costs from $20,000 on up into the hundreds of thousands of dollars, it is evident that every oil operator cannot afford to set up his own center. Many of the larger companies can, however.

"But the geophysical and exploration companies themselves have set up such processing centers primarily to serve their customers.

"It is cheaper to send magnetic records into a central playback center for interpretation and analysis under automatic machine operation than to try to interpret the information without such equipment.

"It's been estimated that the cost per record, in normally interpreting a magnetic recording, runs about $4.90. The same record processed through a data-processing center costs the operator only about $3.10 per record.

"We feel that we get good interpretation at a fair cost to us."

Adds a Rocky Mountain operator: "The cost of interpretation varies. On a contract basis, however, it will be between 2% and 8% of the $25,000 we estimate is needed to maintain a crew in the field for a month.

"Thus, interpretation on a contract basis would amount to from $500 to $2,000 for the work done by a crew in a month."

Another source notes that reduced rates are offered for large-volume contracts.

Convenience is almost as important as the cost advantage to companies availing themselves of the services offered by data-processing centers.

A Houston-based representative for a company doing work abroad says:

"It's very expensive to collect a lot of tapes in a foreign country and then return home to find that the tapes are no good.

"This would mean a return trip to

SOUND

(distribution)...

. . . is the word for Milwhite service!

measure mud service by

MILWHITE

mud sales company

Houston, Texas

A DIVISION OF MISSISSIPPI RIVER FUEL CORPORATION

why YUBA BARITE'S high specific gravity pays off in performance and service!

From the Yuba Barite mines in Nevada comes an ore with a specific gravity of 4.2 or better—the natural property that makes Yuba Barite the ideal choice in any drilling operation where a maximum weight mud is essential. And because Yuba Barite requires no beneficiation, there's one less step from mine to mud pit . . . one more reason why toolpushers from the Four Corners to the Pacific Coast rely on speedy Yuba Barite service.

Strategically located mills in Salt Lake City, Utah, in Fresno and Emeryville, California assure a dependable source of supply. And Yuba Distributors, through their experience, can help you with your specific mud problems.

YUBA MILLING DIVISION
METALS DISINTEGRATING COMPANY, INC.

General Offices, Dept. A, Elizabeth 8, N. J.
Salt Lake City, Utah • Emeryville, California • Fresno, California

that country for new tapes. But now that these centers are being established in foreign countries, this problem is being reduced."

There are almost as many reasons for using the data-processing centers as there are companies contracting for their services.

An Oklahoma explorationist says:

"An unlimited combination of filters can be used from tape obtained by one shot—a considerable saving in a country where holes only stand up under one charge, and where it is difficult to go back to do any reshooting.

"Also, in case some future new technique is developed, tape can be used again to give the new treatment to records already obtained."

A Texas geophysicist adds:

"A big advantage of magnetic tape service is its flexibility in modifying field records.

"The permanent record can prove to be quite valuable in stockpiling information for future use. Use of the playback tapes can often tie various areas together, giving more complete data on bigger sections."

And another says:

"We are able to perform the standard interpretations ourselves. But to get a corrected record of the cross section, we have to send the tape to a processing center."

There still are some oil companies and operators, however, that are not completely sold on magnetic-tape recording.

The area manager of one geophysical firm says his company is aware of the service, but does not use it. Reason: "Most of our work is with independent operators, who haven't yet been sold on the value of the tape.

"The value is questionable in small surveys—section, half-section, or even quarter-section—ordered by the independents."

He adds that his firm is actively trying to sell more magnetic tape work.

Some West Texas independents say the biggest drawback to the magnetic tape service, as they see it, is that it is considerably more expensive than standard seismograph methods.

The head of a Denver geophysical firm also has that objection. "Anytime you go to magnetic tape," he explains, "it's going to be more expensive—positively.

"In some areas it works wonderfully, as in southeast Utah. But in others, like the Denver-Julesburg Basin, it isn't worth a darn."

Another limiting factor at present to rapid growth of data-processing

For special shopping needs, she consults the specialist . . . why don't you?

In addition to the great variety of quality products for ordinary oilfield uses, your "Oilwell" store has several specialists available to help you when the occasion requires. The subsurface pump technician, pipe line and refinery specialists, the pump engineer . . . these are a few of the experts whose technical knowledge and experience can be directed to the solution of your problem . . . at your "Oilwell" store.

USS and "Oilwell" are trademarks

Oil Well Supply Division of USS United States Steel

Branches Serving All Oil Fields Executive Offices—Dallas, Texas · **Area Offices**—Calgary, Alberta · Casper, Wyoming · Columbus, O. Dallas, Texas · Houston, Texas · Tulsa, Okla. · Los Angeles, Calif. · **Export Office**—30 Rockefeller Plaza, New York 20, N. Y.

centers is the cost of setting them up.

One geophysicist estimates that it can cost as much as $200,000 to set up a complete playback center.

One reason for the relatively high cost is the necessity of having equipment to handle various kinds of tape. Industry efforts, however, may eliminate this problem before long.

A Tulsa geophysicist notes that, of the 50 or so data-processing centers now in operation throughout the world, all vary as to the type of equipment in use.

He adds, however, that, essentially, every one of them can accomplish a corrected cross section, and allow for making composites. "The over-all objective is to reduce the signal-to-noise ratio," he says.

Seismograph Service Corp., of Tulsa, recently introduced an "Omnitape" transcriber, which enables it to interpret any size or type of magnetic record.

But, according to one Oklahoma source, "most playback centers must use specific equipment to evaluate certain sizes of magnetic tapes properly."

"There are many sizes of tapes," this source adds, "and they are recorded at various speeds. The industry is striving for standardization of magnetic recording tapes, and this will eliminate the need for special equipment to either transfer the data or display it."

SIE says that its MS-12 GeoData centers can process information from about 85% of all magnetic-tape-equipped seismic crews.

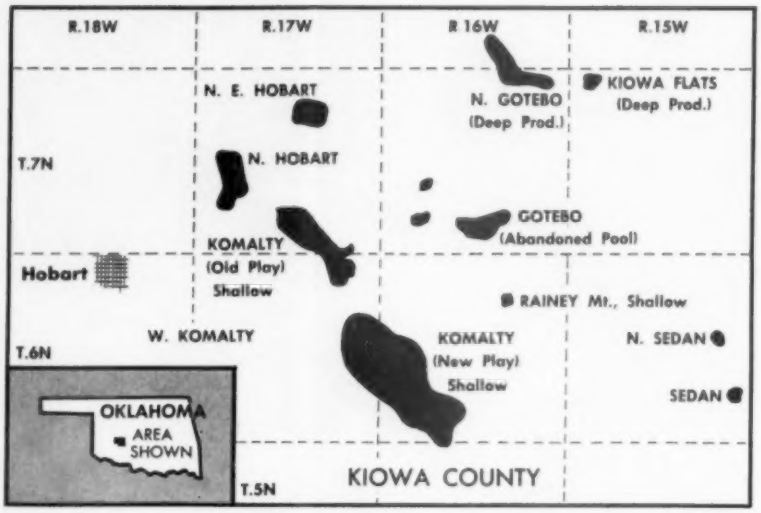
Manufacturers of magnetic-tape recording equipment are among those leading the push for more of the processing centers.

SIE, for example, recently mailed a letter to customers listing 18 companies that had installed the GeoData processing equipment. This letter says, in part:

"We feel that the establishment of the GeoData program fills the need for processing centers to service the approximately 250 SIE tape-recording systems that are in the field doing production work as of Feb. 1, 1958.

"This figure represents the majority of all tape-recording equipment in the field today."

Other companies pushing development of playback centers include Texas Instruments Inc., of Dallas, which manufactures processing equipment; Geophysical Service Inc., an affiliate of Texas Instruments, which operates centers in which it processes and interprets records both for itself and for others; and Techno Instrument Co., of Los Angeles, a manufacturer of processing equipment.



Shallow Pays Brighten Oklahoma

The busiest place in Oklahoma right now is the small Komalty area, in the southwestern part of the state, where drilling has opened up some 130 shallow producers in the past year.

This busy spot is in Kiowa County. Production is found at around 500 ft. Average depth of current completions is usually less than this, and never deeper than 900 ft.

The lure of shallow production at Komalty has attracted widespread drilling by independents.

A total of eight wildcats are being drilled at the present time. And some of the wells completed in the past few months have opened new pools, among them the Rainey Mountain pool, northeast of Komalty, and the West Komalty gas pool, 4 mi. west of Komalty.

Development drilling has extended the Komalty pool to the southeast, and the present play covers an area 3 mi. wide and 4 mi. long, trending northwest-southeast.

This success has not gone unnoticed. Service companies have moved into Hobart, the county seat, about 8 mi. northwest of the play, and locations have been filed with the state Corporation Commission in a steady stream, averaging 10 to 15 per week earlier this year.

Another lure besides shallow production is low cost.

Completions seldom top the $6,000 mark. Drilling is done with cable tools in nearly all cases, and it takes three to seven days to complete a well. Most wells are completed from open hole, because there is little or no water found with the crude.

Though most of the wells at Komalty are low producers, some have flowed as high as 100 bbl. per hour.

In one part of Komalty, which has shaped up as the best area of the field, some wells have recorded flows from 1,000 b/d to 2,400 b/d. Highest flow recorded yet in the field was 1,000 bbl. in two hours from the Hunton (Devonian) at 527-32 ft.

Though few producers reach a high output, most are completed as commercial pumpers after acidizing.

The general area has had similar plays before, but none as lively as that now under way at Komalty.

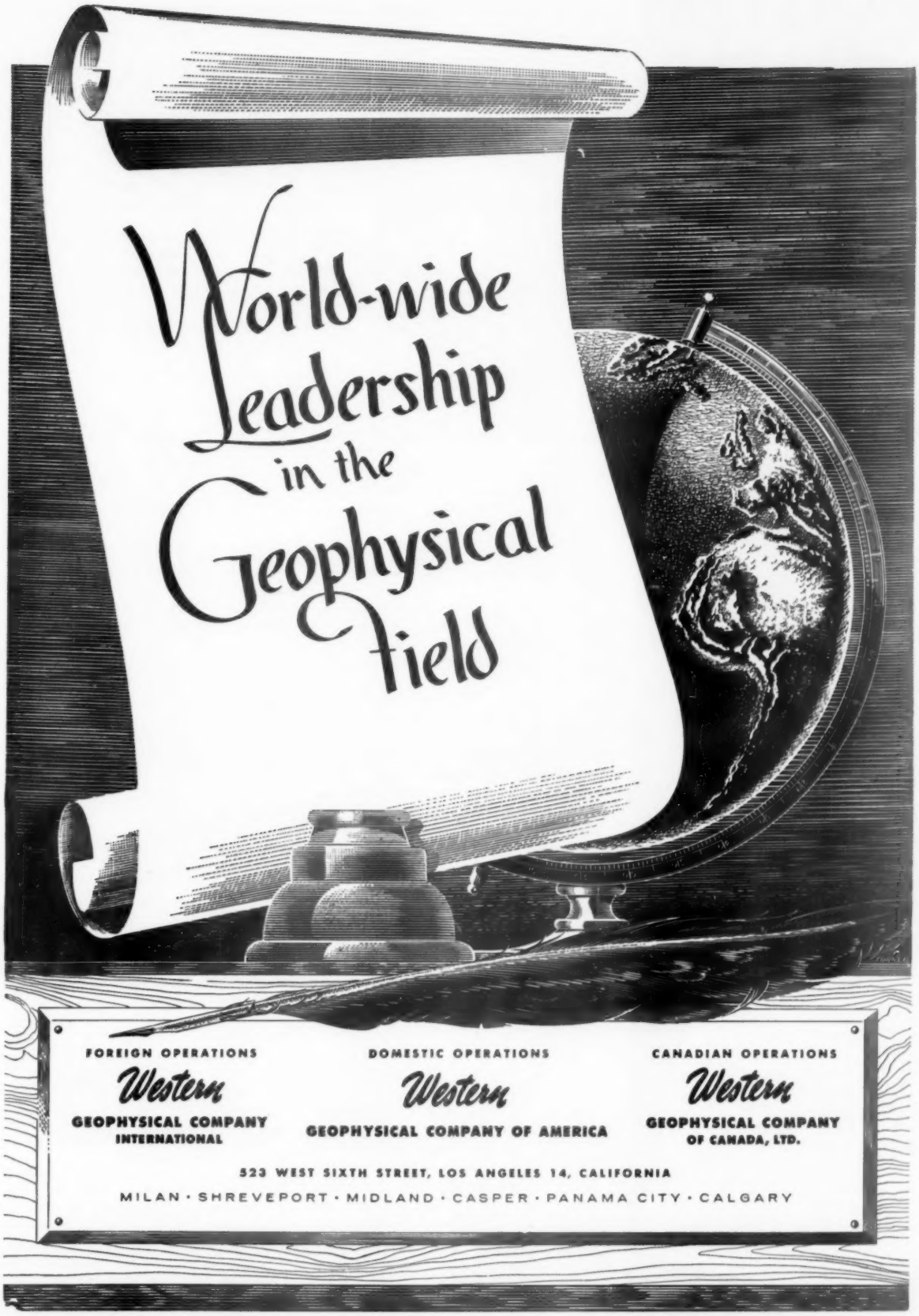
In 1939, production was found north of Hobart at a depth of 1,000 ft., and a drilling flurry occurred during the mid-1940's.

The first indication of shallow production in the Komalty area came in 1950, when Tennell-Mead drilled in section 34-7n-17w, northwest of the current play, and completed a pumper making 25 b/d from open hole at 955-73 ft. This established a new pool, and caused a small play in the older portion of Komalty (map).

Drilling was carried on sporadically until late in 1956, when several flowing wells were completed, with production from the Hunton. This set the stage for the current activity.

Geologically, the Komalty area lies on the mountain front on the south flank of the Anadarko Basin.

Production only a few miles to the north is found at a much deeper level, with some producers completed at 6,000 ft. in the Springer (Pennsylvanian) sand. Geologically, the Springer is above the Hunton, which is the main pay at Komalty.



FOREIGN OPERATIONS
Western
GEOPHYSICAL COMPANY
INTERNATIONAL

DOMESTIC OPERATIONS
Western
GEOPHYSICAL COMPANY OF AMERICA

CANADIAN OPERATIONS
Western
GEOPHYSICAL COMPANY
OF CANADA, LTD.

523 WEST SIXTH STREET, LOS ANGELES 14, CALIFORNIA

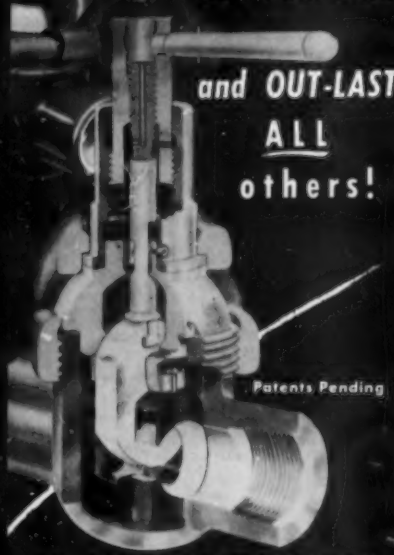
MILAN • SHREVEPORT • MIDLAND • CASPER • PANAMA CITY • CALGARY

DEMCO

MUD KING

the Mud Valve designed and built to OUT-PERFORM

and OUT-LAST ALL others!



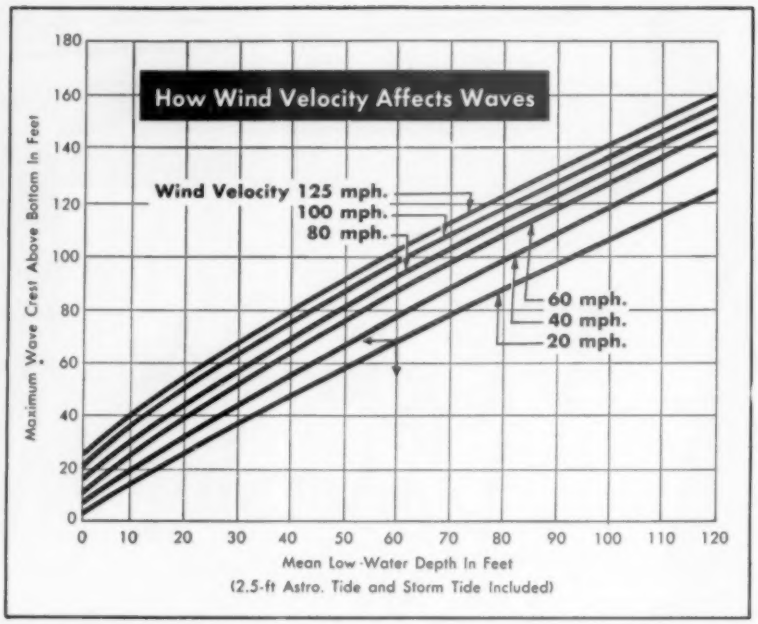
THE INDUSTRY'S FINEST VALVE FOR WATER, OIL, GAS AND ALL MUDLINE SERVICES

PLUS FACTORS

- Easier Operation Under Pressure
- Faster Opening and Closing
- Closes Drop-Tight without Bumping
- Fewer Parts Subject to Wear
- Easier, Faster Disassembly & Reassembly . . . without tools
- Body Remains in Line While Entire Inner Assembly Lifts Out
- Grease Chamber Encloses Threaded Parts . . . Seals Out Abrasives and Corrosives
- Positive Seal Under Line Pressure

DEMCO DRILLING EQUIPMENT MANUFACTURING CO.

P. O. Box 4728 • Oklahoma City, Okla.



WAVE HEIGHT DATA is vital to offshore platform design. This is one way that new . . .

Study Aids Offshore Safety

A new study offers offshore operators in the Gulf of Mexico a guide to the amount of clearance above water that mobile platforms need in rough weather.

The study was made by A. H. Glenn & Associates, meteorological consultants, for Charles D. Wood Co., of New Orleans, a marine surveying and engineering firm.

The results give statistical evidence as to how far above the water line platforms must stand to withstand wave action caused by violent weather.

The estimated safe platform height depends largely on the mean low-water depth at the platform's location.

The chart prepared by Glenn (above) shows, for example, that a 60-mph. wind at a location having a 30-ft. mean low-water depth will result in a maximum wave-crest elevation of 52 ft. above bottom.

The same wind where low-water depth is 50 ft. would cause a maximum wave crest of about 75 ft. above bottom; a 70-ft. depth, 98 ft.; and a 100-ft. depth, 128 ft.

"The recommended clearance of the platform deck above the mean low-water depth should not be less than the maximum wave heights for the corresponding depths of water . . . after taking into consideration allowance for normal expected penetration of the hull or caissons into the ocean floor," says Wood.

The estimates include factors other than straight wind action.

After computing the total wave height above the still-water level, Glenn added calculated storm tides and the normal astronomical tide of 2½ ft. expected in the northwest Gulf of Mexico (these are included in the estimates shown on the chart).

The firm used "average" bottom characteristics along the Louisiana-Texas coast in its computations.

"The crest elevations are those of the highest occasional waves in the storm," Glenn added. "Relatively few such waves can be expected in a single storm."

The study also estimated the frequency of Gulf Storms ranging from 20 mph. to 125 mph. These estimates were based on Weather Bureau records between 1900 and 1954.

Glenn termed storms between 40 mph. and 75 mph. "tropical storms and severe winter storms," and those with wind velocities higher than 75 mph. "hurricanes." The study reports the average interval in years (or fractions of a year) between storms of specified intensities.

The project was undertaken as part of an effort to reduce offshore losses.

Its purpose is "to assist us in calculating safe working depths for mobile offshore drilling units," says Wood.

"This is part of our loss-prevention program, designed for interested insurance underwriters."

they took two...

ZAPATA OFFSHORE CO.

Left to right: Hugh Liedtke, treasurer, Wayne Dean, vice-president, George Bush, President, of Zapata Offshore Company, Houston, Texas.

The SCORPION on location

The VINEGARROON under tow

twice selected LeTourneau Platforms . . . praises two-year payoff performances

After two years of successful operation with LeTourneau drilling platforms, President George Bush reports:

"We at Zapata are very proud of the performance of our two LeTourneau platforms. Both the Scorpion and the Vinegarroon have rendered exceptionally fine service to the offshore oil industry and we feel they will continue to do so for some time to come."

The Scorpion has demonstrated its mobility by completing a move from one location to another in less than eight hours—including a two hour tow.

The seaworthiness and ease of handling of the Scorpion were demonstrated recently when a single tug towed it from Galveston to Cay Sal Bank, Bahama Islands,—a distance of over 1000 miles.

The Vinegarroon, too, has proved itself under adverse conditions. In June, 1957, it withstood the full force of the destructive hurricane Audrey. Although the anemometer of the platform registered winds in excess of 100 mph before it was broken, the Vinegarroon was the first mobile offshore platform in the area to resume full scale operations.

LeTourneau platforms are custom engineered and built for a wide range of operating conditions. If you have a situation requiring a new platform we'd welcome the opportunity to discuss it with you. Call us for additional information, or write for descriptive literature. No obligation, of course.

LET
Le TOURNEAU EQUIPMENT

R.G. LETOURNEAU INC

MARINE PRODUCTS DIVISION
2857 SOUTH MACARTHUR
LONGVIEW, TEXAS

M113

How to find Quality

and Service In Mud Pumps

Precision and skill of a proven manufacturer combined with the talents and know-how of a leading supply organization add up to two words . . . unexcelled service. That's the service assured by the appointment of Jones & Laughlin Supply Division as a distributor of Gardner-Denver mud pumps.

Gardner-Denver has a well deserved reputation in the oil fields as a top producer of **quality** mud pumps. Models range from 100 to 1250 hp with capacities and pressure ratings to meet any drilling requirement.

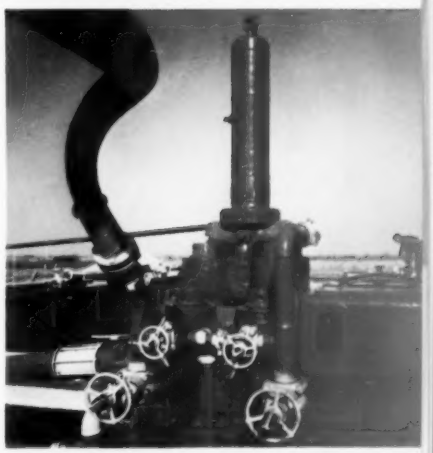
With these pumps and replacement parts available through the numerous Jones & Laughlin Supply Division stores in the United States and Canada . . . **service** is assured!

For complete information, contact your local J&L Supply store . . . office . . . or write us today, Drawer 2481, Tulsa, Oklahoma.

Jones & Laughlin

SUPPLY DIVISION – Tulsa

J&L—A GREAT NAME IN SUPPLIES



Printed in U.S.A.

85-FT. SERVICING DERRICK---

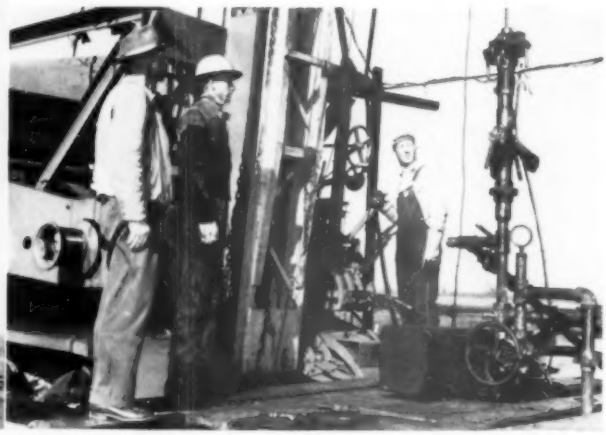
"Triples our speed...puts extra production into portable, mobile 48-L"

Says L. A. Wilson, of WILSON, Oklahoma

"Nobody in this area has a finer piece of equipment for servicing than this 48-L and its new servicing derrick," states Wilson, on left below, watching one of his crews service a 6,980-ft. oil and gas well near Madill, Okla. "The derrick puts a spudder-type rig in a production class it never enjoyed before, particularly as a service outfit. We used to have to pull tubing a joint at a time and lay each piece down on the ground. This unit triples our speed, and it puts that extra production into a portable, mobile rig a man can move around and set up fast.

"It's a combination which always impresses customers favorably. It assures that the job will be finished safely and on time," adds Wilson. "In the five years we've had the spudder, I believe we've replaced only a couple of brake bands and done one or two other minor repairs."

FIRST with the FINEST in Spudders



Getting a profitable edge on competition is what pleases this veteran drilling contractor most about his Bucyrus-Erie 48-L spudder equipped with 85-ft. servicing derrick.

With this rig, Wilson stacks 60 to 70-ft. tubing quickly, neatly on the platform instead of laying it on the ground in shorter length in a time-consuming operation. He can stack up to 7,300 feet of 2½-in. tubing in the derrick's convenient fingerboard rack. For moves, the power raised or lowered derrick telescopes and folds down over the rig, and the Wilson crew is off to the next job.

You can start now to enjoy the profitable advantage of a Bucyrus-Erie servicing derrick. Get all the facts from your nearby distributor or write us direct. Do it now! 57558

BUCYRUS ERIE

BUCYRUS-ERIE COMPANY • DRILL DIVISION, U. S. Highway 40 West, Box 324, Richmond, Indiana

Utah Ranks High In the Rockies

Utah is rapidly reaching the forefront as a Rocky Mountain producer. In just a year, production has soared from 7,650 b/d to 131,324 b/d.

With this new production high, Utah becomes the tenth-largest producing state, and is running neck and neck with Colorado for third place in the Rockies. Colorado production now averages 131,697 b/d, just a shade ahead of Utah.

There are strong reasons for Utah's move ahead in the past year, with both development and pipeline connections playing a vital role. The reasons:

• The state—and particularly the Paradox Basin—has undergone tremendous development in the past year.

Wells in the Utah portion of the basin are now supplying about 120,000 b/d of the total production of the state, with the major portion coming from Aneth, Ratherford, White Mesa, and McElmo Creek fields.

The remainder of production in the state comes from the Uinta Basin, with the major portion coming from Red Wash and Ashley Valley fields. Both of these have also been developed during the past year.

• The new Four Corners pipeline has opened a market for Paradox crude.

This line, to the Los Angeles refining district, is now taking 60,000 b/d from both Utah and New Mexico.

• The new Texas-New Mexico Pipe Line Co. line to Jal, N.M., is now completed and in operation.

The line is now taking its capacity, 50,000 b/d (PW—Jun.20'58,p44).

The major portion of Utah production goes out of the state, to California and, via the Jal line, to Texas and the Mid-Continent. Because of the existing pipeline complexes and established market direction, the state's own refining district at Salt Lake City depends to a large extent on crude from western Colorado.

An important question involving the future of production in Utah will be resolved with the settlement of the Aneth and Desert Creek spacing issue.

The issue of 40-acre versus 80-acre spacing, which will be settled by the state Oil & Gas Conservation Commission in August, will set a precedent for the Paradox Basin (PW—Jun.27'58,p29).

Summer: A Far North Challenge

An unusual drilling operation will be carried out in the Northwest Territories this summer, a season of the year when Canada's north is normally closed to drilling.

Shell Oil Co. of Canada, Ltd., will attempt a deep test this summer in the remote Liard River region of the Territories, some 650 miles north-northwest of Edmonton.

Success depends on how water transportation works out. Most supplies for this summer's operation have been shipped on a vast network of rivers, thus avoiding the boggy muskeg that usually stops all operations until the ground is frozen.

Some 2,200 tons of supplies have been shipped via as much as 360 mi. of rivers through the wilderness.

Materials were sent from Alberta to routing points at Grand Slave Lake, just north of the Alberta border, and at Fort Nelson, B.C. Barges for moving equipment from Great Slave Lake were brought down from Aklavik, at the mouth of the Mackenzie River.

The movement of equipment and supplies into the test area presented the biggest challenge: Everything had to be timed according to the change in seasons.

In January of this year, a fleet of trucks was gathered to transport equipment on the first leg of the long trip north. Shell rig No. 2, and all other heavy pieces of equipment, were trucked to Hay River, on Great Slave Lake, while light materials, including equipment for the camp and bulldozers, were sent by truck to Fort Nelson.

These shipments had to be completed early in the season, before the spring road bans were imposed. Also, materials had to be stockpiled at the transit points in readiness for barge shipment, which couldn't start until the end of May.

Equipment from Fort Nelson was barged down the Nelson and Liard Rivers to the test location. This trip took three days, and covers 250 mi.

Heavy equipment was barged from Hay River across Great Slave Lake, then on the Mackenzie and Liard Rivers, a three day, 360-mi. trip.

The main distribution point for supplies and personnel during the drilling operation will be Fort Simpson, 70 mi. downstream from the test site. Travel will be either by light boat or bush aircraft.

When the water level drops markedly from the spring highs, barge traffic will be impossible, and it is planned to airlift supplies.

What's New / IN EXPLORATION, DRILLING, PRODUCTION

Sinclair Oil & Gas Co. has launched the first phase of the largest waterflood in southern Oklahoma's Golden Trend area.

The secondary recovery project, known as the Southeast New Hope Gibson Sand unit, covers 10,680 acres in Garvin County.

Development of the entire unit will take from four to six years. The first stage will cover 1,680 acres, and will be developed on 80-acre, 5-spot patterns. A total of 21 wells will be converted to water injection.

Estimated additional recovery by waterflooding has been estimated at 8-million to 10-million bbl.

•

The Colorado Oil & Gas Conservation Commission has rejected a plea by Pure Oil Co. that production from two wells just outside the company's Adena J sand unit be cut back to prevent drainage from the unit.

Pure claimed that Petroleum, Inc., operator of the wells, would realize an estimated $607,000 in oil revenues not properly due if it continued to pump the wells at the rate of 40 b/d. Pure asked that production be cut in half.

Petroleum, Inc., witnesses told the commission that if any oil had migrated from the unit to the edge wells, it was because of production practices on the unit. The company also said that there was five times as much oil under its leases as had been calculated by Pure.

•

Reports indicate that competitors of Eastman Oil Well Survey Co. will meet the company's 12% reduction in charges for directional drilling and other downhole operations.

If Eastman's price cuts are met, it is estimated that drilling costs in the U.S. would drop by almost $1-million per year.

•

The U.S. Geological Survey has approved several new units in the Rocky Mountains.

Oil, Inc., is the operator of the Westwater unit, an 11,000-acre block in Grand County, Utah.

Superior Oil Co. of California will operate the Salt Wash unit, which contains 27,586 acres, also in Grand County.

Pan American Petroleum Corp. will operate the Green River Bend unit, Sublette and Lincoln Counties, Wyo. The block, on the western flank of the Green River Basin, has more than 23,900 acres.

•

The Texas Railroad Commission has combined two fields in West Texas.

The Prichard (Devonian) and Hutex (Devonian) fields, in Andrews County, will now be known as the Hutex field. It was found that the two areas produce from a common reservoir.

•

Stockholders of Sunset International Petroleum Corp. and McRae Oil & Gas Corp. have approved a merger of McRae into Sunset, as proposed by directors of the two firms (PW—May2'58,p24).

•

Humble Oil & Refining Co. has obtained title to about 125,000 acres in Vermilion Parish, La., by trading some of its stock for all assets of Louisiana Furs Corp., of Chicago.

Among the oil and gas fields located on the acreage are Pecan Island and Fresh Water Bayou.

Various oil and gas producing companies are leaseholders and operators in the fields. Humble says it has bought, in separate transactions, "more than 85%" of royalties held by others on portions of the acreage acquired.

•

The Texas Railroad Commission has granted Shell Oil Co. permission to use automatic custody transfer equipment on several leases in West Texas.

Shell will use ACT equipment on its W. M. Moore, W. M. Moore A, Dora Roberts, and A. L. Wasson D leases, Wasson field, Yoakum and Gaines Counties.

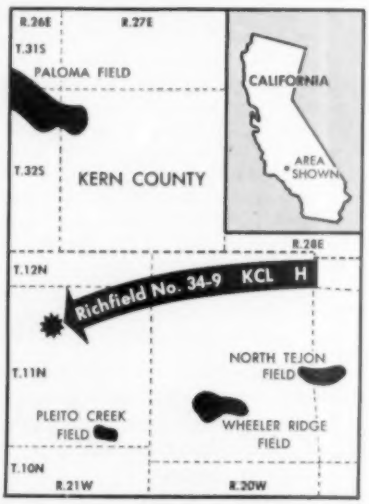
•

A booklet describing the 18 major producing zones for oil and gas in Kansas has been published by the University of Kansas, at Lawrence. The author describes the book as being a "work sheet" for geologists searching for new production in the state.

•

A lease sale of offshore land owned by Alabama is planned for July 28. All but one of the 42 tracts, totaling 144,648 acres, are presently under lease to Tidelands Development Corp., with primary terms in effect until 1962. Successful bidders' bonus payments will be held in "escrow until

Richfield Has a Good Discovery



Richfield Oil Corp. No. 34-9 KCL H, section 9-11n-21w, Kern County (Calif.) wildcat was completed at the rate of 2,520 b/d of 29.8-gravity oil and 740,000 cu. ft. of gas daily (based on one-hour gauge) through ½-in. choke and perforations at 11,452-560 ft. in the Reef Ridge sand of Upper Miocene age. The San Emidio Nose discovery will be cut back to a daily rate of between 300 and 400 b/d, according to a Richfield official.

Richfield believes it has discovered a significant new field, basing its opinion on the size of the structure and the low dips, which indicate sizable extension of the producing sand.

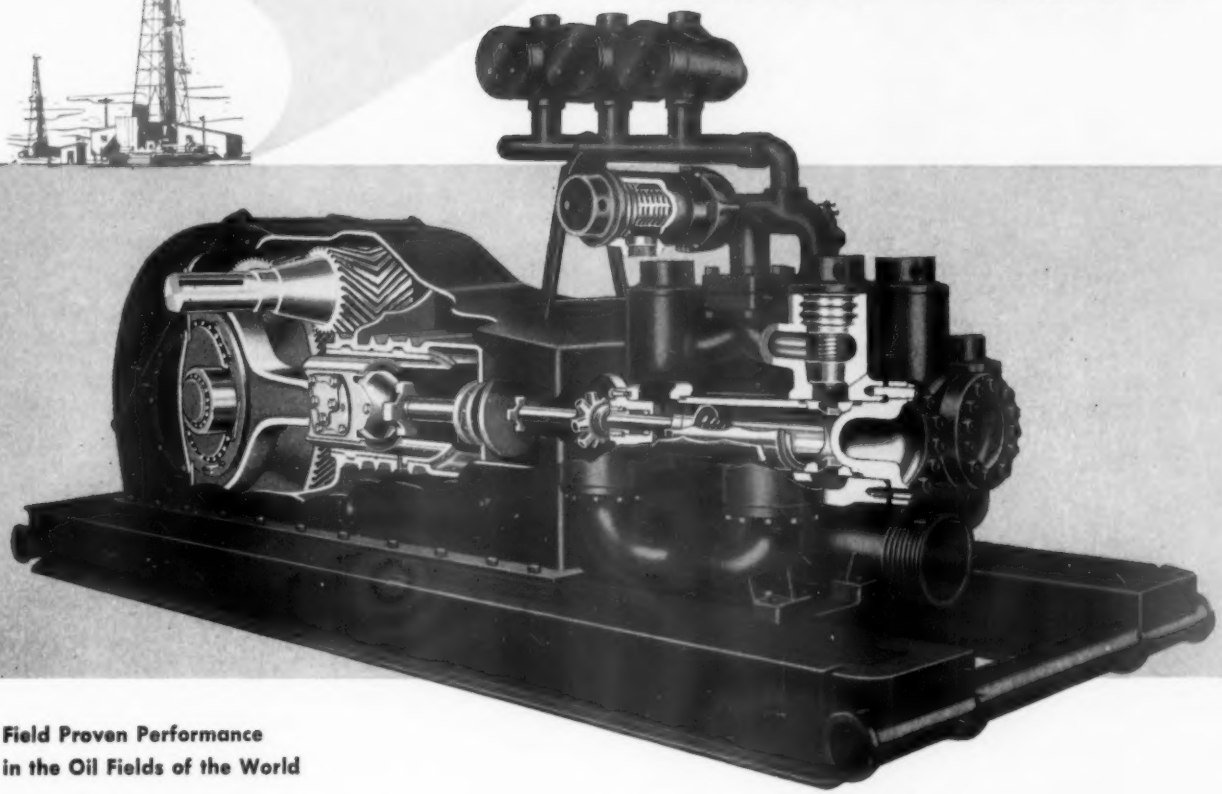
Richfield holds leases on 13,906 acres in the area, 8,506 of them from Kern County Land Co. Operator is moving in to drill an offset ½ mi. northwest.

Here's the Reason

FOR THE SWING TO

CONTINENTAL-EMSCO

SLUSH PUMPS



- **Field Proven Performance in the Oil Fields of the World**
- **No Daily Adjustments**
- **No Greasing**
- **Lightweight Fabriform Construction Cuts Transportation Costs.. Pump Easier to Handle at Rig**
- **Automatic Lubrication**
- **"Exposed" Liner Design Cuts Liner Washouts**
- **Six Sizes Make it Possible to Match Pressure-Volume Requirements for Your Rig at the Lowest Possible Initial Investment**

DISTRIBUTED BY

BOVAIRD SUPPLY COMPANY
TULSA, OKLA.

MID-CONTINENT SUPPLY COMPANY
FORT WORTH, TEXAS

EXPORT: Mid-Continent Supply Co., Inc.
45 Rockefeller Plaza, New York 20, N. Y.

IN CALIFORNIA
CONTINENTAL-EMSCO COMPANY

MANUFACTURED BY

CONTINENTAL-EMSCO

Serving the Oil and Gas Industries ... Worldwide

SP-702R

CONTINENTAL-EMSCO COMPANY • A Division of The Youngstown Sheet and Tube Company
General Offices: DALLAS, TEXAS • Plants: HOUSTON • GARLAND • LOS ANGELES

When oil men talk about OFFSHORE DRILLING the name you hear repeated more and more is . . .

READING & BATES

READING & BATES

READING & BATES

READING & BATES

READING & BATES

READING & BATES
OFFSHORE DRILLING CO.
• 1101 Philtower Bldg., Tulsa, Oklahoma
• 610 Saratoga Bldg., New Orleans, Louisiana

possession on the tracts can be delivered."

•

Drilling Highlights

Louisiana Offshore—C. G. Glasscock-Tidelands Oil Co. No. 1 State Lease 2682, Eugene Island area, was completed for 3,240,000 cu. ft. of gas and 94 b/d of 65-gravity distillate through 12/64-in. choke and perforations at 13,714-18 ft.

North Texas—Southern Union Gas Co. No. 1 J. E. Womack Unit, P. Ryan survey, A-705, Wise County, was completed as a Strawn discovery in the Boonsville Bend gas area, flowing 130 b/d of 39-gravity oil through 24/64-in. choke and perforations at 3,640-48 ft. and 3,652-62 ft. Operator will complete dually from an Otoka conglomerate section, which tested about 6-million cu. ft. of gas per day from about 6,000 ft.

South Louisiana—Hunt Oil Co. and Pan American Petroleum Corp. No. 2 State Lease 2402, in Calcasieu Lake, Cameron Parish, 14s-9w, tested 400 b/d of 32-gravity oil through ⅛-in. choke and perforations at 11,834-44 ft. The well has taken the last of South Louisiana's shallow, piercement-type salt domes out of the nonproductive class, and follows drilling of 30 dry holes on the structure—which lies entirely beneath the lake—since 1927.

In St. Martin Parish, Kerr-McGee Oil Industries No. 1 LaRose, section 19-19s-8e, was completed at the rate of 5,466,000 cu. ft. of gas per day, on the basis of a one-hour test through 18/64-in. choke and perforations at 12,555-75 ft. and 12,582-88 ft.

Oklahoma—T. P. Petroleum Corp. No. 1 Donohoe, section 21-18n-2w, Logan County, flowed 168 b/d through perforations at 5,312-32 ft. in the Red Fork. The discovery is 4 mi. northwest of Guthrie pool.

In Oklahoma County, Calvert Drilling, Inc., et al No. 1 Fred Straka, section 32-11n-3w, flowed 33 b/d through 24/64-in. choke and perforations at 7,162-72 ft. in the Bartlesville. The discovery is 2½ mi. north of West Moore pool.

California—Transiera Exploration Co. No. 2 Muller, section 17-7s-4w, San Mateo County, was completed on pump for 40 b/d of 32-gravity oil through perforations at 2,298-306 ft. in the Muller sand. The discovery is ½ mi. south of La Honda pool, but is on a separate structure.

West Texas—C. B. Ridgway No. 1 W. A. Scott Estate, section 8, block 113, PSL survey, Culberson County Delaware pool opener 7 mi. west of the depleted Marsh pool, was completed on pump for 132 b/d of 34-gravity oil, plus 11% water, through perforations at 2,001-11 ft.

To Our Subscribers in the U.S.

▸ We are changing our method of sending you Petroleum Week. Instead of using an addressed wrapper, we will in the future mail the magazine with your name and address right on the front cover.

▸ By eliminating wrappers we can improve our service to you: handle address changes faster, start new subscriptions more promptly, and ultimately speed up delivery of the magazine.

▸ There's another advantage. With your name right on the cover, your copy will always be identified as yours—and you'll have a better chance of getting it back if someone borrows it.

▸ Since it sometimes takes a while to get a new system working smoothly, will you please let both your local postmaster and us know if your copies of Petroleum Week don't arrive as promptly as they should.

▸ Don't be concerned if you still continue to receive wrapped copies for a few weeks; it will take us several issues to complete the changeover.

Harry Waddell, *Publisher*

A new kind of swab is coming your way!

Here's the handiest combination of efficiency and flexibility ever developed in a tubing swab. The BJ Hydrodynamic Swab has a simple, two-piece body and a pair of either of two types of rubbers that fit onto it. This is all you need for any kind of swabbing job that comes your way. There is less to buy, fewer parts and accessories to fool with. Yet, you'll be able to swab faster, with greater recovery, and with fewer rubber changes.

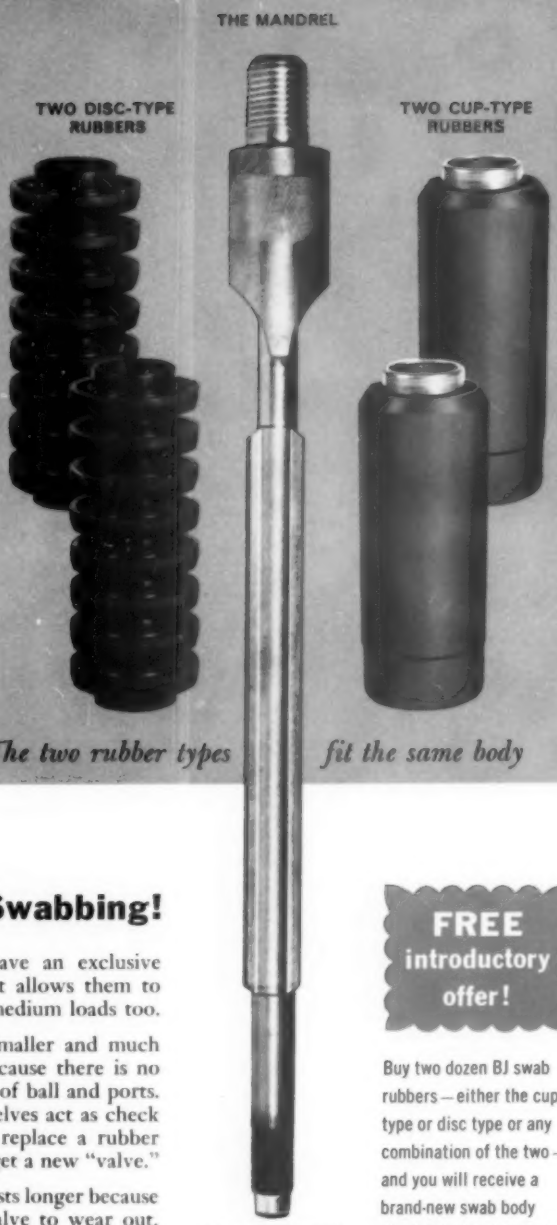
YOU BUY LESS
BECAUSE YOUR BJ SWAB
DOES MORE!

BJ TUBING SWABS

FREE INTRODUCTORY OFFER
See other side

With the new BJ Tubing Swab

THIS IS ALL YOU NEED FOR ANY SWABBING JOB



The two rubber types fit the same body

Better, Faster, More Economical Swabbing!

VERSATILITY. There is complete interchangeability of the two rubber types. One steel body serves for both. You simply unscrew the guide nut, let the rubbers slide off, and slip the replacements on.

LOW COST. There's but one swab body to buy and two sets of two swab rubbers, and you're all set for any kind of tubing swabbing operation. Less to buy, less to stock, yet you're fully prepared for any job.

FASTER FALLING. No ports to cause drag. On descent, rubbers fit loosely inside tubing; when the swab is pulled up, the rubbers expand to form a positive seal. You get in and out of the tubing in a hurry.

BETTER SWABBING. BJ swab rubbers are designed to pull the greatest possible loads – yet they have an exclusive flexible feature that allows them to adjust to light or medium loads too.

ADVANCED DESIGN. Smaller and much easier to handle because there is no bulky arrangement of ball and ports. The rubbers themselves act as check valves. When you replace a rubber you automatically get a new "valve."

LONGER LIFE. Body lasts longer because there's no check valve to wear out. Rubbers last longer because of the fact that there's a clearance between the tubing and the descending rubbers.

POPULAR TUBING SIZES. In each of the two rubber styles there are sizes for 2", 2½", and 3" tubing. The two larger sizes are interchangeable on a single swab body.

FREE introductory offer!

Buy two dozen BJ swab rubbers – either the cup type or disc type or any combination of the two – and you will receive a brand-new swab body **absolutely free!** This offer is for a limited time only, so don't miss out. See your favorite supply dealer or your BJ field man today.

Sold through your supply store.

WATCH BJ FOR THE NEWEST

Byron Jackson Tools, Inc.

A SUBSIDIARY OF BORG-WARNER CORPORATION

P.O. Box 2017A, Terminal Annex, Los Angeles 54, California • Cable: "BJTOOL"
Export Address: 580 Fifth Avenue, Suite 510, New York 36, New York

PRINTED IN U.S.A.

Beg Pardon

Dear Sir:

In using your table contained in the article, "Light Product Imports Are Growing" [PW—May16'58,p13], we found certain errors which we thought you might want to know about.

The figures for imports of jet fuel in 1956 are actually the figures for exports of jet fuel.

The figures for gasoline imports in February and March, 1956, should be 4,000 and 3,000.

The November, 1957, figure for residual imports should be 470,000.

And, of course, the Bureau of Mines has now revised its figures for February, 1958.

JOHN W. BOATWRIGHT
CHIEF ECONOMIST
STANDARD OIL CO. (IND.)
CHICAGO, ILL.

Reader Boatwright is correct. The jet fuel imports for 1956, by months, in b/d were: 4,000; 3,000; 24,000; 6,000; 25,000; 21,000; 16,000; 42,000; 54,000; 37,000; 17,000; and 4,000. Revised Bureau of Mines data for February, 1958, show gasoline imports at 13,000 b/d; distillate imports at 43,000 b/d; residual imports at 640,000 b/d; and jet fuel imports at 61,000 b/d.

Why Use Ton-Miles?

Dear Sir:

"Gasoline Is a Ton-Mile Bargain."

If they were giving prizes for silly headlines, I am sure you would get a first for this [PW—May16'58,p16]. If you can show me where I can buy gasoline by the ton-mile, by the mile, or even by the ton, I would like to know about it.

Some of the figures in the body of the article make even less sense, since so far as I know, no private person who drives on the public highways can buy his gasoline exclusive of taxes.

The ton-mile concept is a gimmick of slight engineering interest, and was very obviously dreamed up in order to have some encouragement for the larger automobiles to enter economy runs.

Have you any figures showing ton-miles per gallon for diesel freight trains?

CHARLES G. BRAGG
THE RALPH M. PARSONS CO. OF CANADA, LTD.
TORONTO, ONT.

Of course the average motorist is interested primarily in how many miles he can drive per gallon, and at what cost, rather than in how many ton-miles he gets. And of course only a minority of motorists are aware of the amount of taxes in the price they pay for gasoline.

However, it is precisely such thinking that obscures the real progress oil companies have made in improving their gasoline product.

Wouldn't you say that a given volume of gasoline is improved if it can move a greater weight a greater distance? Wouldn't you agree that the public is getting more for its money if this power is produced at lower unit cost? Don't you think the oil industry is entitled to credit if it has produced this greater power at a lower cost?

Do you really think gasoline today is inferior to the gasoline of 1930, or do you think there has been an improvement? If you agree that there has been an improvement, on what basis other than the ton-mile standard chosen by Ethyl Corp. would you measure the progress?

Thank you for your reply to my earlier letter. I certainly accomplished my purpose, which was to get a rise out of you.

Certainly I admit that gasoline is better than it was in 1930. I can remember when the way to get high-octane gasoline was to drive to the airport and buy aviation gasoline (perhaps 80 octane), and then put a few ounces of ether in it. This got spectacular results—in some cases to the extent of blowing the head right off the block.

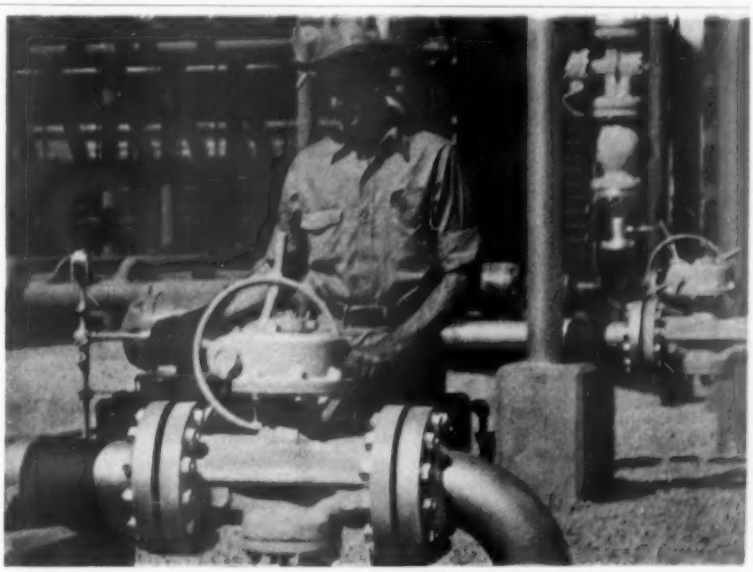
The concept of the ton-mile means something to you, and it also means something to me. But I doubt if it will turn out to be a really useful advertising concept.

The real problem is that the automobile has consistently succeeded in suckering the petroleum industry into producing gasoline on which the petroleum industry has not really received a fair rate on investment.

The premium gasoline now sold has an octane number substantially in excess of that required to produce the same economy and performance in a properly designed engine. To put it another way, the cheap way to get performance is to mill the heads. The right way is to use well-designed combustion chambers and manifolding.

If you really want to help the petroleum industry, maybe you should try this approach.

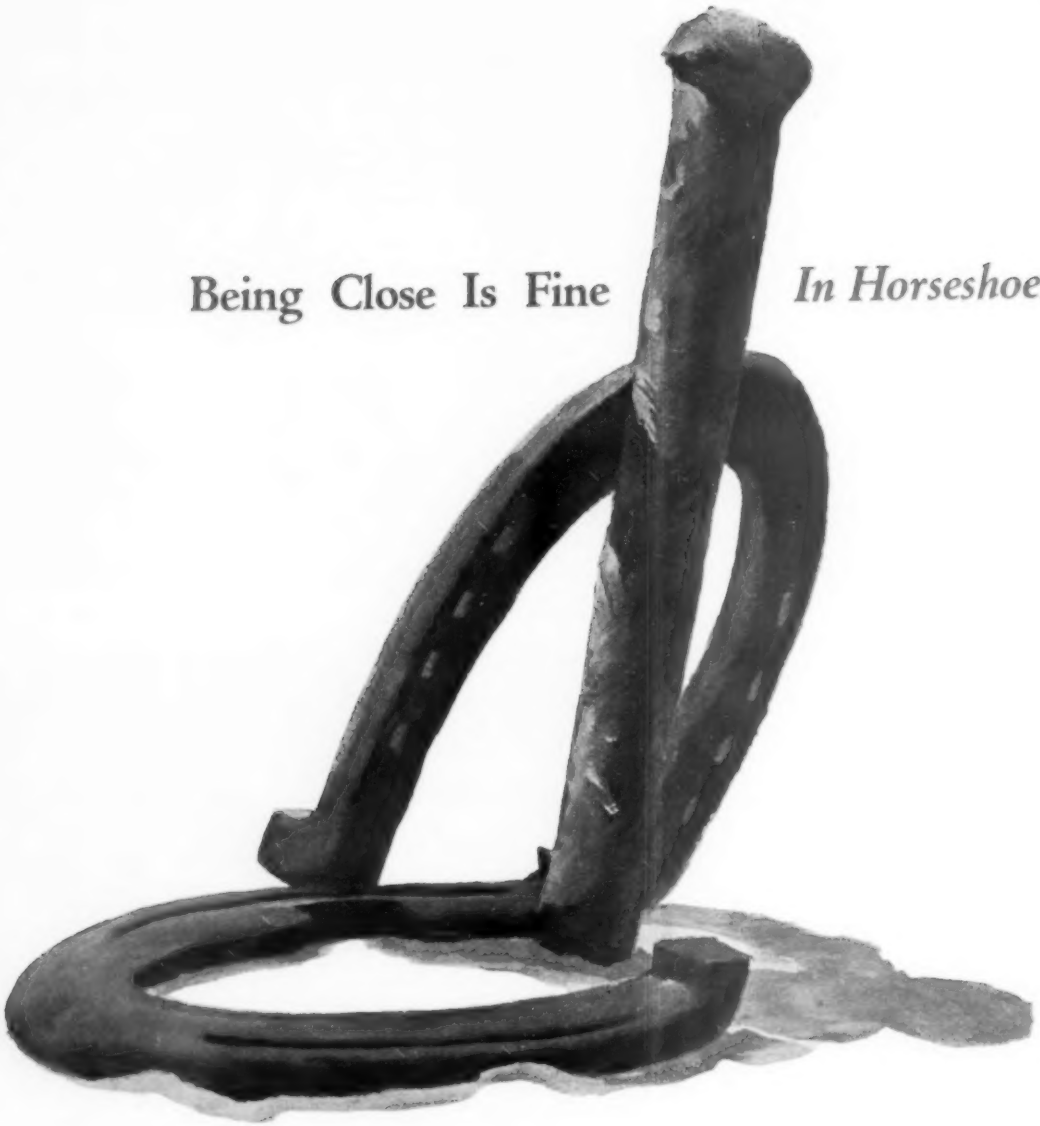
CHARLES G. BRAGG

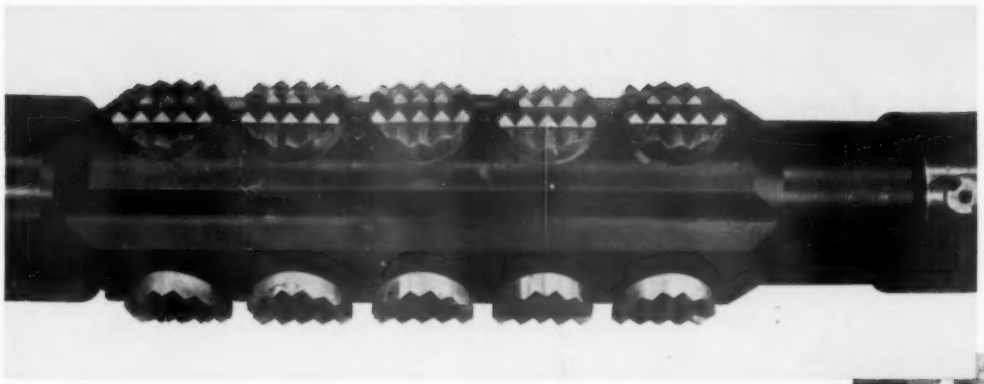


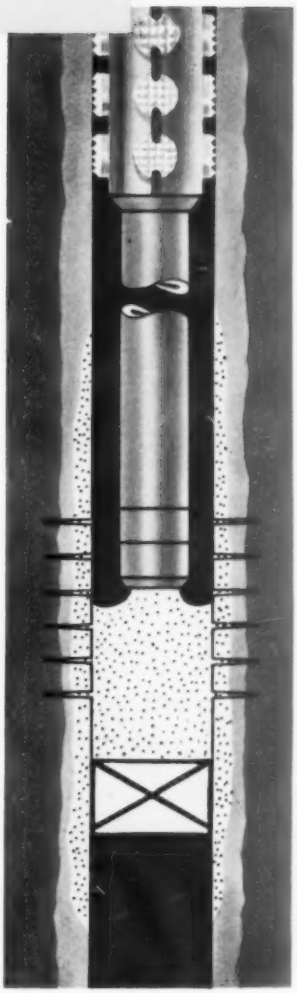
Flow control investment is more critical than ever—that's why wherever oil and gas are produced, transported or processed, you'll see . . .

ROCKWELL-Nordstrom VALVES
another fine product by
ROCKWELL
Rockwell Manufacturing Company, Pittsburgh 8, Pa.

Being Close Is Fine *In Horseshoes*







New Welex Wireline Cementer Provides Pin-Point Accuracy

Whatever your water problems—infiltration of the perforations, channels of communication, leaky casing or shoes, bottom-hole water – the new Welex *Wireline* Squeeze Cementing Tool provides the infinite accuracy and strict economy never before possible in squeeze cementing operations. The completely new and different wireline cementing tool gives more predictable results in increasing displacement, preventing cement contamination, eliminating tool movement during the pressurizing cycle, retaining pressure for a prolonged period of time, obtaining a satisfactory packer seal under high pressure and equalizing pressures following the squeeze.

Developed after extensive testing and field use, the Welex Wireline Squeeze Cementing Tool incorporates many new innovations which combine to make the tool a practical and economical operation in sealing off perforations, sealing off portions of a perforated section, sealing off portions of an open hole section and sealing off channels of communication.

The new Wireline Squeeze Tool offers advantages which are not possible with any other squeeze cementing tool: (1) use of rocket fuel with a retarded burning rate to create larger amounts of gas at higher temperatures; (2) a positive-sealing packer developed by Welex and not available anywhere else in the oil field; (3) a hydraulic anchor capable of holding more than 10,000 psi differential; (4) a trouble-free release mechanism by which pressure inside the tool and that of the hydrostatic head are equalized for easy recovery of the tool; and (5) a new type cement slurry developed by Welex decreases WOC time and stays in place after the operation is complete.

The new Welex Wireline Squeeze Cementing Tool is available from any Welex District Office in every major oil center. Call your Welex representative today for more information.

ORIGINATORS OF Welex JET PERFORATING

W E L E X, I N C.

Fort Worth, Texas

Division offices in Denver, Houston, Midland, New Orleans, Tulsa and Wichita.
District offices in every major oil center. Subsidiaries in Canada, Peru, and Venezuela.

SUN'S OILS AND GREASES HELP JOBBERS BUILD OFF-HIGHWAY LUBE SALES

Where rugged operating conditions demand lubricants with stamina, Sun's dependable quality will build customers for you.

With construction booming—at a pace totalling more than $50 billion a year—operators are busier than ever before. They're looking for rugged, dependable lubricants to keep their equipment operating without break-down.

You can increase your share of this growing market by gearing your business to Sun's "all-purpose" line of oils and greases. For example:

Sun Solvent Refined Heavy-Duty Oils—For use in gasoline engines in severe service or in automotive diesel engines. Sun Solvent Refined Heavy-Duty Oils lengthen engine life because of their high film strength, internal cleansing characteristics and anti-acid action.

Sun Multi-Duty Grease—A premium lubricant developed for those who desire a single all-purpose grease for a variety of equipment. It is excellent for on- or off-the-highway equipment because of its all-season performance and resistance to water.

SUN OIL PRODUCTS ARE EASY TO SELL

For detailed information, prices, delivery data and sales aids, write to: Department PW-7.

GENERAL WHOLESALE DEPARTMENT

SUN OIL COMPANY PHILADELPHIA 3, PA.

In Canada: SUN OIL COMPANY LIMITED, Toronto and Montreal

© SUN OIL CO.

DU PONT *Petroleum Chemicals* NEWS

Number 89 in a Series of Bulletins for the Petroleum Industry

JULY 1958

New Teflon® parts for TEL valves eliminate many maintenance troubles

NEW DIRECTOR OF SALES

W. ALLEN TAFT was recently appointed Director of Sales of the Du Pont Petroleum Chemicals Division. He succeeds W. Sam Carpenter, III, who has been appointed Assistant General Manager of the Electrochemicals Department.

Mr. Taft joined the Du Pont Company in 1935, starting as a chemist in the Explosives Department. He became a supervisor two years later and has held various supervisory and managerial positions in explosives manufacturing.

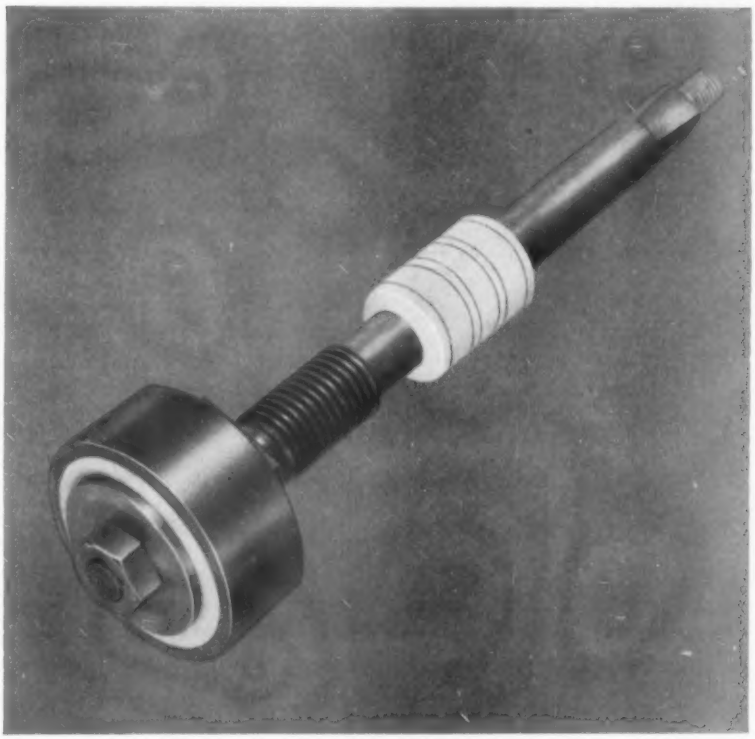
In 1950, he was transferred to the Photo Products Department and appointed Assistant Manager of the Parlin, N. J., plant. Entering sales work two years later, Mr. Taft was made Assistant District Manager of the Chicago sales office. In 1953, he was appointed Assistant Director of Sales of the Photo Products Department in Wilmington, and later that same year was advanced to Director of Sales of the department. He held this position until his recent transfer to the Petroleum Chemicals Division.

Mr. Taft was graduated from the Massachusetts Institute of Technology with a B.S. degree in chemical engineering.

Now users of Du Pont tetraethyl lead can look forward to new freedom from faulty valve operation. This has been made possible through the use of "Teflon"* TFE-fluorocarbon resin, as a replacement for the lead closure face in valves controlling the flow of tetraethyl lead.

In addition to the savings on maintenance costs, and the greater convenience, the "Teflon" parts are expected to double the average life of valves used in tetraethyl lead lines. Moreover, the possibility of personnel exposure to tetraethyl lead is reduced.

OVER



ADVERTISEMENT—Prepared for the Petroleum Chemicals Division of E. I. du Pont de Nemours & Company (Inc.)

DU PONT *Petroleum Chemicals* NEWS

CONTINUED

"Teflon" Valves

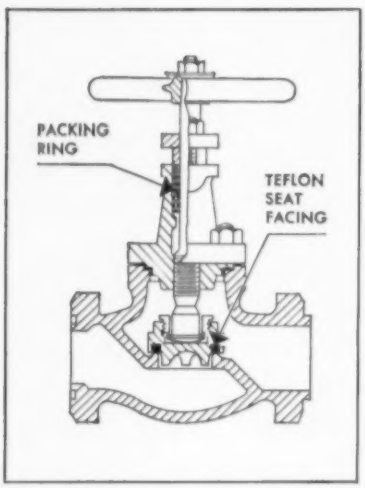
Now a standard specification

Testing of the valves at a number of refineries during the last two and a half years has produced such excellent results that they have been adopted as standard. They will be used exclusively in all new refinery installations, and when replacements are needed in TEL blending plants serviced by the DuPont Petroleum Chemicals Division.

Because of the chemical inertness and the superior wear and lubricating qualities, cup and cone packing of "Teflon," is now used also in the valves having the new-type closure.

Facing stays put

The most common problem with earlier lead-faced valves was that the soft



lead, while assuring a tight seat in service, was extruded easily by repeated forceful closure. The conventional packing tended to dry out, causing difficult operation, and also required frequent tightening of the packing gland for leak prevention.

Service life doubled

The average life of the "Teflon"-equipped valves is estimated at more than double the service life of the older type valves.

The new valves are supplied for refinery blending plants by DuPont as one of the company's numerous services to tetraethyl lead customers.

*"Teflon" is DuPont's trademark for its TFE-fluorocarbon resin.

YOU OUGHT TO KNOW...

DANIEL L. PASTELL heads up the engineering division of the DuPont Petroleum Laboratory. He is in charge of the Laboratory's octane evaluations, fuel blending studies, special instrumentation, and the road test work of the DuPont fleet of fuel test cars.

Dan's work keeps him in close contact with both the automotive and petroleum industries. Because of this, he often acts as a "clearinghouse" for information on combustion chamber design and fuel performance, which is of interest to both industries.

In 1950 he won the Horning Memorial Award for his paper "Precombustion Reactions in a Motored Engine." He has also had published a number of other papers on precombustion reactions and fuel blending studies.

He is well versed in electronics as well as chemical engineering, holding a B.S. degree in chemical and electrical engineering, plus a Master's degree in chemical engineering.

Pastell was educated at the Univer-

DANIEL L. PASTELL

sity of Washington and served in the Army during World War II. He is a member of the Society of Automotive Engineers, The American Chemical Society, the American Institute of Chemical Engineers and the Institute of Radio Engineers.

LITERATURE AVAILABLE

Here is a listing of some of the many bulletins, reports, booklets, technical papers, and other aids available to you through DuPont Petroleum Chemicals Division offices:

New DuPont dry-dye Eduction Probe and No-dust Drumhead – A folder describing and illustrating the revolutionary new dry-dye eduction devices which make gasoline dyeing a cleaner, faster, and more efficient operation.

DuPont Petroleum Dyes – Includes data on chemical composition and physical properties of the complete line of DuPont Petroleum Dyes. Also spectrophotometer curves, rate-of-solution tables, addition and handling recommendations.

Advantages of an "Ashless" Additive in Distillate Fuel Oils – Discusses the home heating troubles caused by metallic ash deposits on stack controls and ignition electrodes, and the diesel sparking hazard caused by glowing metallic ash particles. Tells how these adverse side effects can be reduced through the use of an ashless additive.

Sales Promotion Aids for Dealer Meetings–Describes the many DuPont aids available. A handy check list for anyone planning programs for dealer meetings.

You can order from the nearest office listed below:

SALES OFFICES

Chicago 3–8 So. Michigan Ave. . . RAndolph 6-8630
Cleveland 15–25 Prospect Ave. . . . SUperior 1-1363
Houston 2–
705 Bank of Commerce Bldg. . . . . CApitol 5-1151
Los Angeles 17–612 So. Flower St. MAdison 5-1691
New York 20–
1270 Ave. of the Americas . . . COlumbus 5-2342
Philadelphia 2–3 Penn Center Plaza LOcust 8-3531
Pittsburgh 22–1 Gateway Center . . ATlantic 1-2933
San Francisco 4–111 Sutter St. . . . EXbrook 2-1934
Seattle 3–4003 Aurora Ave. . . . . MElrose 2-6977
Tulsa 1–1811 So. Baltimore Ave. . . . LUther 5-5578
In Canada–DuPont Company of Canada (1956) Limited, Petroleum Chemicals, 85 Eglinton Ave. East, **Toronto 12**–Ontario . . . . . HUdson 1-6461
In Other Countries–Organic Chemicals Department, Export Division, 7447 Nemours Bldg., Wilmington 98, Del., OLympia 4-5121, Ext. 2962.

DU PONT
REG. U. S. PAT. OFF.

Better Things for Better Living
... through Chemistry

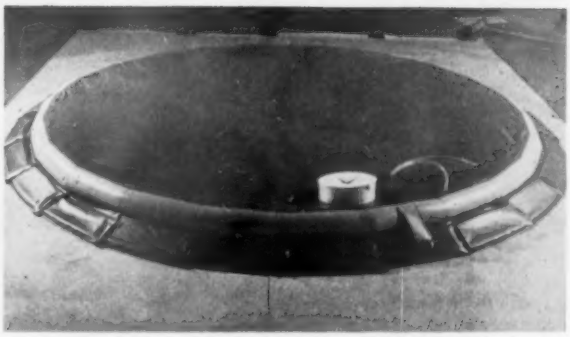
Du Pont Tetraethyl Lead and other Petroleum Additives

OVER

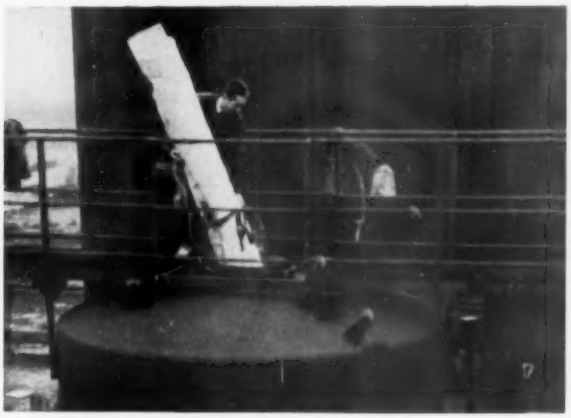
ADVERTISEMENT—Prepared for the Petroleum Chemicals Division of E. I. du Pont de Nemours & Company (Inc.)

A-7129

Printed in U. S. A.



NEWEST PLASTIC BLANKETS for reducing evaporation losses from storage tanks are the rigid Hamondflote Plastic Cover (left), developed by Hammond Iron Works, and the flexible Mayflower Vapor Seal (right), developed by Esso Standard Oil Co.



TWO EARLY METHODS for reducing evaporation losses from storage tanks are the flexible LaRoche plastic blanket (at left, being installed) and Microballoons (at right, on the surface of crude oil inside a 30,000 bbl. storage tank).

Refiners Fight Evaporation Losses

New tools are ready to help refiners in their fight to save the millions of dollars they lose each year from evaporation losses.

Two new plastic blankets to prevent evaporation of volatile materials stored in tanks are now on the market. They are the rigid, floating Hamondflote Plastic Cover, developed by Hammond Iron Works, and the Mayflower Vapor Seal, developed by Esso Standard Oil Co. and made under license by Plastic Creators, Inc., of New Jersey.

These are in addition to the already well-publicized LaRoche plastic blanket and Sohio's Microballoons.

Of course, all branches of the oil industry—production, transportation, refining, and marketing—are vitally concerned about the dollars evaporating away from them.

The American Petroleum Institute took an important step to coordinate knowledge in this field when it sponsored a symposium on evaporation loss during its 1952 annual meeting.

The views of various companies regarding losses from all types of storage, along with the description of conservation tanks available, were reported at that meeting. API then formed the Evaporation Loss Committee to continue the studies. This committee recently conducted the second symposium on the subject, at Houston.

Evaporation losses in a refinery are significant enough so that during a recession, such as we now have, these losses could mean the difference between profit or loss for a refiner.

Even in boom times, the dollar value of products lost through evaporation can amount to a sizable percentage of a refiner's net income. So, if these losses stay substantially the same when business is slack, there can be real trouble.

This helps to explain why refiners are currently showing increased interest in the evaporation-loss problem.

Supplemental internal "blankets," which prevent evaporation losses by covering the surfaces of stored liquids, have received the greatest publicity in recent years.

At least three plastic blankets and two plastic "particulate" materials have been developed to combat evaporation losses, and are currently on the market.

The purpose of these materials is to form a cover over the surface of the stored liquid, riding with the liquid as it rises and falls during filling or emptying, or expansion in the tank. By using these relatively vapor-proof seals, evaporation losses are reduced.

One of the newest blankets is made of rigid polyurethane foam. It is a development of Hammond Iron Works, and is presently undergoing tests.

The novel feature of this blanket, called the Hamondflote Plastic Cover, is that it is made in pie-shaped sections, which are assembled into a

FAST REFINERY CONSTRUCTION demands the RIGHT combination . . . .

The ingredients are well known; but the proper proportions and blending are what make the difference. To meet today's requirements for higher-octane fuels and a greater range of petrochemicals, you not only must have the assurance of fast construction, but the knowledge your plant will enable you to attain and maintain a competitive position. Treco gives you that assurance.

Treco would like to talk with you prior to the planning stage. This could save you both time and money later.

....talk with the TRECO man.....

TRECO

A DIVISION of VITRO CORPORATION of AMERICA

The REFINERY ENGINEERING Company

FARMINGTON NEW YORK TULSA TORONTO

complete blanket after being inserted into the tank through manholes or other existing openings.

At present, this blanket is limited to tanks 20 ft. or less in diameter. In these sizes, the load-carrying capacity of the blanket is high enough to support a man's weight (picture, top left, page 55).

The foam from which the blanket is made consists mostly of closed cells, making it impossible to sink the blanket.

Tests for the Hamondflote Plastic Cover are still in preliminary stages, but indications are that it should have a vapor-conservation ability similar to that claimed for other continuous blankets—on the order of 90% evaporation reduction for gasoline storage.

Another recent U.S. entry in the floating-blanket arena is the multi-plastic Mayflower Vapor Seal, developed by Esso Standard Oil Co.

It is described as an inflatable plastic raft, made of several different plastics, including Du Pont's Mylar and Nylon 63, Goodyear's Videne, and a plastic-impregnated fiber furnished by U.S. Rubber.

While more field experience is needed to determine the full life-expectancy of the Mayflower raft, tests by Esso indicate evaporation-loss reductions of, conservatively, 85% for stored gasoline.

Oldest of the plastic blankets, the LaRoche blanket, was developed in France, and is used extensively in Europe and Africa to reduce gasoline evaporation.

Well over a hundred of these flexible blankets have been installed abroad, according to Devys & Lobo, New York representative of the manufacturer. A few test installations have also been made in the U.S.

The LaRoche blanket is made of polyvinylchloride. It is shaped as a continuous flexible "carpet," the underside of which has a large number of small floats arranged side by side.

Limited tests in the U.S. by Standard Oil Co. (Ohio) indicate evaporation-loss reductions of about 90% to 95% in gasoline storage.

Microballoons, tiny hollow plastic beads forming a vapor-retardant film on top of liquids, were developed by Standard Oil Co. (Ohio). They became commercially available in 1954.

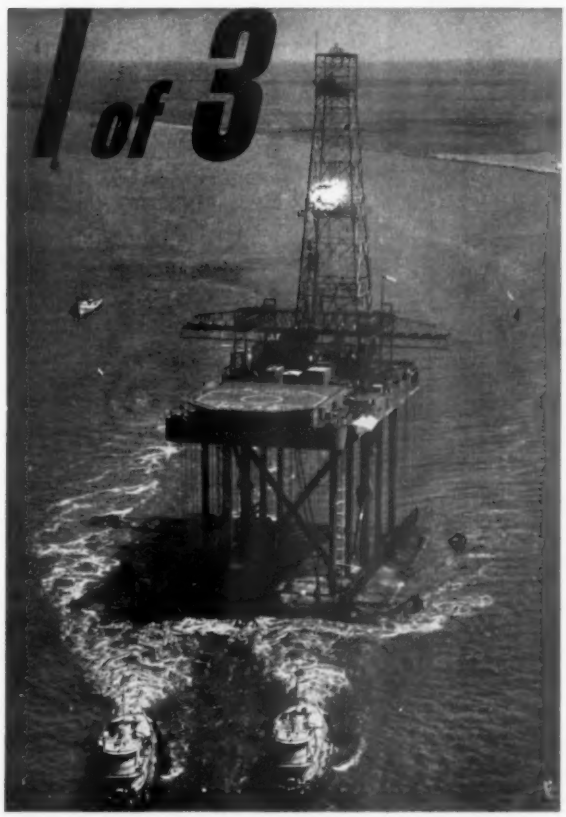
Sohio has licensed two companies to make the Microballoons: Bakelite Co., which uses phenyl-formaldehyde; and Colton Chemical Co., which uses urea-formaldehyde.

Microballoons were designed and recommended by Sohio for crude storage. When they're used for gasoline, a filter is needed to remove Microballoons present in gasoline pumped from storage. And, Sohio says, the filter can cost more than the Microballoons.

ANOTHER RECENT ENTRY among evaporation loss prevention measures are these Mini-Vap expanded polyethylene pillows made by American Agile Corp. The company says that, to its knowledge, the Mini-Vaps have not yet been tried for refinery service.

Evaporation loss reductions of up to 85% for working crude storage, and up to 95% for static crude storage, have been reported for Microballoons.

Several factors affect the magnitude of reduction of evaporation losses when using Microballoons. Among them: thickness of the Microballoon



NEW PENROD MOBILE PLATFORMS

Built to operate in 75 foot water—powered for 20,000 foot drilling—equipped with submersible float for complete mobility, Penrod's "Jim Woodruff," and its two companion platforms offer a new efficiency to any offshore drilling program.

And on all Penrod rigs:

Continuously improved equipment and methods
Thoroughly experienced organization
Individual supervision of each rig
2-way radio on all equipment
Modern housing for operating personnel
High pressure pumps
Use of maximum drill collar weight

FOR MORE HOLE PER DOLLAR
ON LAND • ON INLAND WATERS • OFFSHORE

CALL, WIRE OR WRITE TODAY

PENROD DRILLING COMPANY

J. P. (Jack) Johnson,
Drilling Superintendent

TELEPHONE 3-1601
418 MARKET STREET
SHREVEPORT, LOUISIANA

PENROD DRILLING COMPANY

blanket; inlet turbulence of the tank; and elapsed time between completion of filling and start of emptying the storage.

Though not yet tested in refinery service, cross-shaped polyethylene pillows—called Mini-Vaps—have been used successfully with other liquids.

The Mini-Vap, made by American Agile Corp., Cleveland, has been used to date mainly in open vats and tanks containing steaming liquids.

According to American Agile, its Mini-Vaps can retard evaporation losses by as much as 75%.

What's New / IN PROCESSING

Electronic instrumentation of a refinery can save 10% in maintenance costs compared with pneumatic instruments, says C. D. Ginrich, superintendent of the Port Credit (Ont.) refinery of Regent Refining, Ltd.

Electronic instrumentation of the Port Credit refinery cost the company $135,000 to buy and install, says Ginrich, and only $550 in replacements. The system was completed last year.

Ginrich says electronic instrumentation:

- Can signal rate of change of temperature or stream flow as well as the amount of change.
- Gives faster signals.
- Gives plug-in trouble-finding and reserve replacement units in case of upset.

•

Shell Oil Co. of Canada, Ltd., will build a distillate hydrodesulfurizer at its Shelburn refinery in British Columbia.

A contract for construction of the unit has been awarded to Fluor Corp. of Canada, Ltd.

•

Shell Chemical Corp. has developed a new paving material, called "Guardkote" plastic resin.

The material, a plastic adhesive, is poured on a conventional road surface—either concrete or asphalt—and covered with grit as it starts to harden. The result is a thin, sand-like coating that sticks firmly to the roads, and resists skidding when wet.

•

Controlling interest in Grand Central Rocket Co., Redlands, Calif., has been transferred to Petro-Tex Chemical Corp. by Tennessee Gas Transmission Co.

Grand Central is engaged in the development and production of high-energy solid propellants for rockets.

•

Consolidated Chemical Industries, a division of Stauffer Chemical Co., has put on stream at Ft. Worth a new plant to produce anhydrous hydrogen chloride.

The new facilities, which produce HCl of 99.9% purity, will serve refineries in the South, Midwest, and East.

•

Sun Oil Co. and Olin Mathieson Chemical Corp. will join forces to build and operate a 73,000-ton-per-year urea plant, according to Robert G. Dunlop and Stanley deJ. Osborne, presidents of the companies.

The plant will be built at Marcus Hook, Pa., where Sun has a refinery.

This 8-foot by 30-foot portable bunkhouse is one unit of a complete portable camp produced by Houston Ready-Cut House Co. for a drilling company in Iran. The camp includes bunkhouses, offices, kitchens, laundry, messhalls and a bathhouse—each unit built for compact comfort, mobility and long service.

These units are aluminum-clad over exterior plywood. They are completely insulated, air-conditioned and electrically heated. Houston Ready-Cut delivers complete with bedding, furniture, laundry, shower and kitchen facilities.

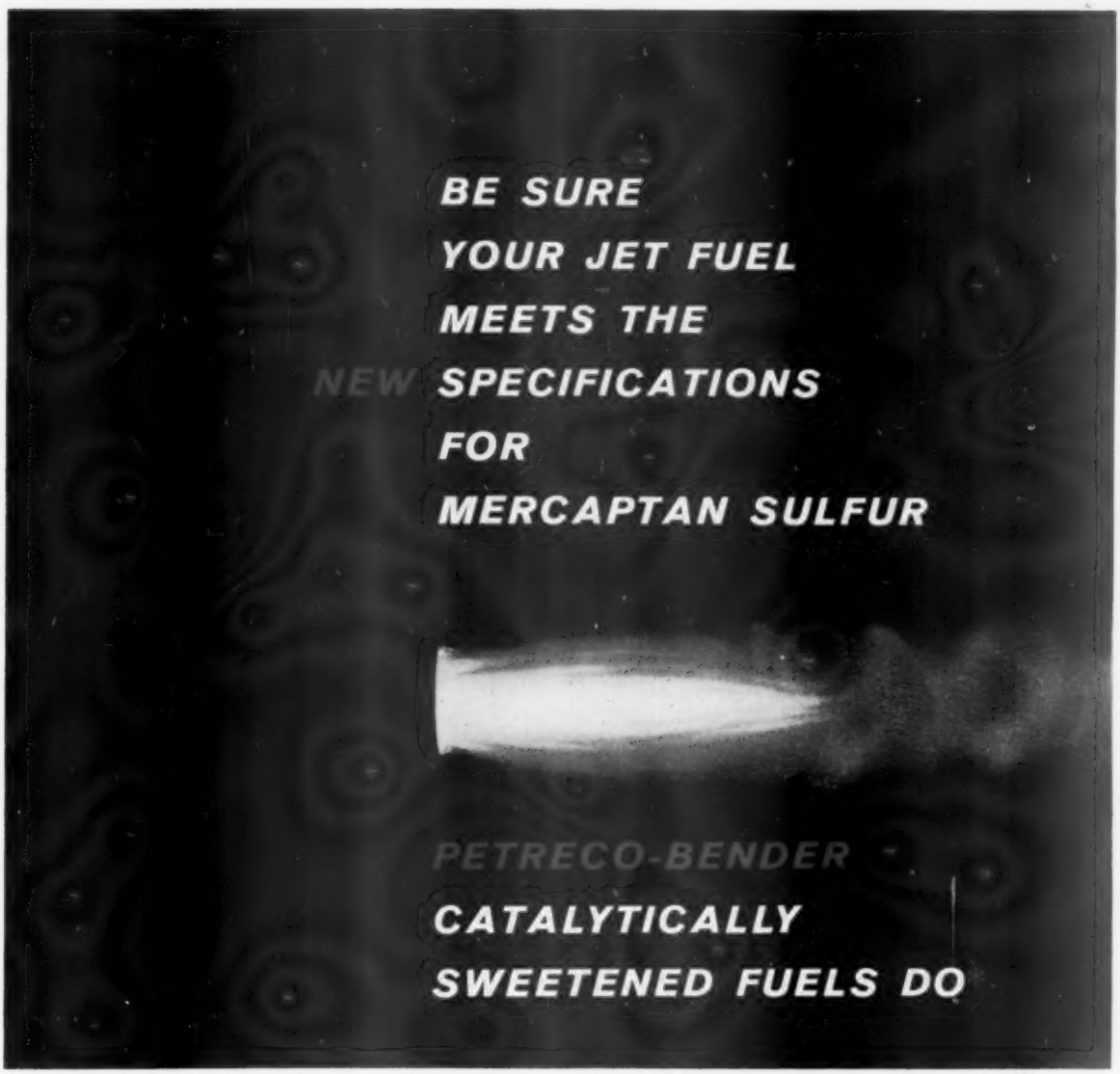
Whatever your housing need, wherever you need it, Houston Ready-Cut can supply portable or prefabricated housing designed to economically meet your requirements. Phone FAirfax 3-9365, or write:

Houston Ready-Cut House Co.
P. O. Box 124 Houston 1, Texas

● Planning a beach cottage? A home in the country? Bet we've got the house plan you want. Save you time and money, too. Call us and see.

HOUSTON Ready-Cut House Co.

PREFABRICATORS SINCE 1917 • CABLE ADDRESS: REDYCUT



Wt./%

* Former Mercaptan Sulfur Tolerance 0.005
New Mercaptan Sulfur Tolerance 0.001

PETRECO-BENDER SWEETENING CONSISTENTLY YIELDS "DOCTOR" SWEET "NON-CORROSIVE" PRODUCTS

The Petreco-Bender Sweetening Process sweetens middle range distillates at an operating cost of 0.5 to 1.0 cents per barrel lower than conventional sweetening processes. The capital investment is low (about one-tenth that of hydrotreating). Get all the facts today. Just call or write . . .

PETRECO

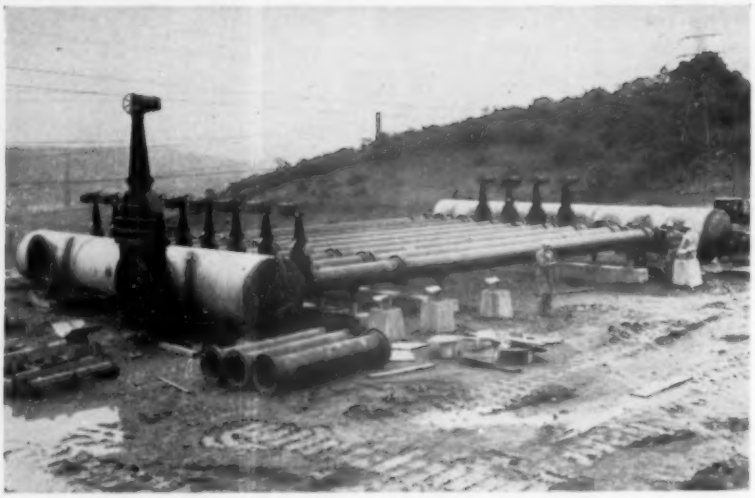
A DIVISION OF PETROLITE CORPORATION

3202 So. Wayside Drive, Box 2546, Houston 1, Texas
1390 E. Burnett Street, Box 7216, Long Beach 7, Calif.

Specialized Petroleum Treating Processes and Equipment

DESALTING • DEHYDRATION • DISTILLATE TREATING • SWEETENING
LUBE OIL TREATING • SEDIMENT REMOVAL

B-58-2



WORLD'S LARGEST PIPE for gas transmission is now being laid near Pittsburgh (left) for Carnegie Natural Gas Co. This work, along with installation of giant meter station equipment (right) to help keep the line running smoothly, is all being done to get the . . .

Biggest Gas Line Ready by '59

Pipeliners with an eye peeled toward the technological future are watching closely these days as laying of "the world's largest gas transmission line" takes place near Pittsburgh, Pa.

"The world's largest" is the line Carnegie Natural Gas Co. is building to carry coke-oven gas, stabilized with natural gas, between U.S. Steel Corp. plants along the Monongahela River near Pittsburgh.

The system is only 25 mi. long, but it consists of mammoth-diameter steel pipe: 16 mi. of 55⅜-in. pipe and 9 mi. of 43¼-in. pipe.

The lines will have a capacity of 255-million cu. ft. of gas a day. Although designed for 50 psi., they will operate initially at a lower pressure of 10 to 12 psi.

The new system will replace smaller lines that have been in service for up to 40 years.

No one goes so far as to say that long-distance crude or gas lines will ever reach the 55⅜-in. diameter of the Pittsburgh line. But in this era of growing emphasis on big-inch lines, many aspects of the line's construction are especially interesting to pipeliners.

Williams Bros. Co., which designed and is building the system, puts it into this perspective:

"This is the world's largest gas transmission line to date. It is probable that it will not remain so, since, as long as the capacity requirements warrant the initial expenditures, there are no real engineering or construction limitations for building even larger pipelines."

The tendency in natural gas trunk lines so far, however, has been to build up to 36-in.-diameter lines, and then to add looping lines when increased demand makes additional throughput necessary.

Although pipeliners needn't study the Carnegie line as "the gas transmission line of the future" they may well benefit from the problems being solved by Carnegie and Williams Bros.

The system's pipe itself is a logical extension of the pipe used in the natural gas trunk lines being built today.

The pipe is being fabricated by the American Bridge Division of U.S. Steel.

Each standard straight section, 40 ft. long, is fabricated from two plates 40 ft. long rolled to half cylinders, with the two longitudinal seams automatically welded. The special sections, which are cut from the standard 40-ft. straight sections, include short straight pieces, plus single and multiple miters to take care of bends in the line.

Most of the 55⅜-in. pipe has a wall thickness of 7/16-in.; the 43¼-in. pipe, a wall thickness of ⅜-in. For spans where the pipe is used as a structural member, the wall is ½-in. thick.

About 9½ mi. of the pipe will be buried, and 15½ mi. supported on towers above the ground.

The above-ground pipe is of all-welded construction; the buried pipe is generally joined by couplings between welded double-jointed sections.

The buried pipe is double-coated and double-wrapped; the exposed pipe has two coats of red lead and two coats of aluminum paint.

Some other design features of the system, although they parallel features of "normal" pipelines, are nevertheless "firsts."

For instance, the system was designed to include facilities to clean the lines with giant "pigs," or scrapers. The size of the pigs, their launchers, and receivers, make up one of the design "firsts."

Other design features include: support towers for the exposed pipe ranging from 1 ft. to 35 ft. high; a 360-ft. suspension bridge with 175-ft. approaches; and over a mile of cantilever supports anchored below railroad tracks to suspend the pipeline over the Monongahela River.

Special preparations were necessary before actual construction could begin.

Foundations, supporting towers, and the suspension bridge were built, and a 62-in.-diameter casing for highway and railroad crossings was installed.

The longest of these casings required the installation of twin 62-in.-diameter casing pipe for 247 ft. Fabri-

ECONOMY

starts with TWENTY GRAND

From the largest fleet of crew and supply vessels offshore select the one most economical combination for your particular operation. Whether you need service for one or for a dozen rigs, TWENTY GRAND's 30 modern boats hold the best solution to any supply problem. Let this versatile fleet serve you.

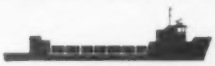
BOATS

Largest Fleet Offshore

15

SUPPLY VESSELS IN FOUR SIZES

650-ton capacity



550-ton capacity

475-ton capacity

350-ton capacity

DECK AND

OIL BARGES

15

CREW/SUPPLY BOATS IN TWO SIZES

85 footers

65 footers

TWENTY GRAND towing

INCORPORATED

OFFSHORE OIL CENTER, MORGAN CITY, LOUISIANA — PHONE: MORGAN CITY 5013

Foxboro makes a better instrument . . . or Foxboro doesn't make it!

Consotrol Control Station undergoing final calibration. Full 4-inch chart width is one of many advances in small-case panel instruments introduced by this Foxboro development.

FOXBORO
REG. U.S. PAT. OFF.

Creative Design and Manufacture of Instruments and Instrument Systems for Measurement and Control of Process Variables. The Foxboro Company, Foxboro, Mass., U. S. A.

cation of the pipe was also begun during this period.

The pipeline route follows what Williams Bros. calls an "extremely difficult and congested right-of-way, with varying soil conditions that required considerable study during the design and construction planning."

Portions of the route are through concentrated steel plant facilities and limited working space. Other portions encountered railroad yards, housing developments, and heavily traveled highways.

All this contributed to making the right-of-way preparation an especially difficult job.

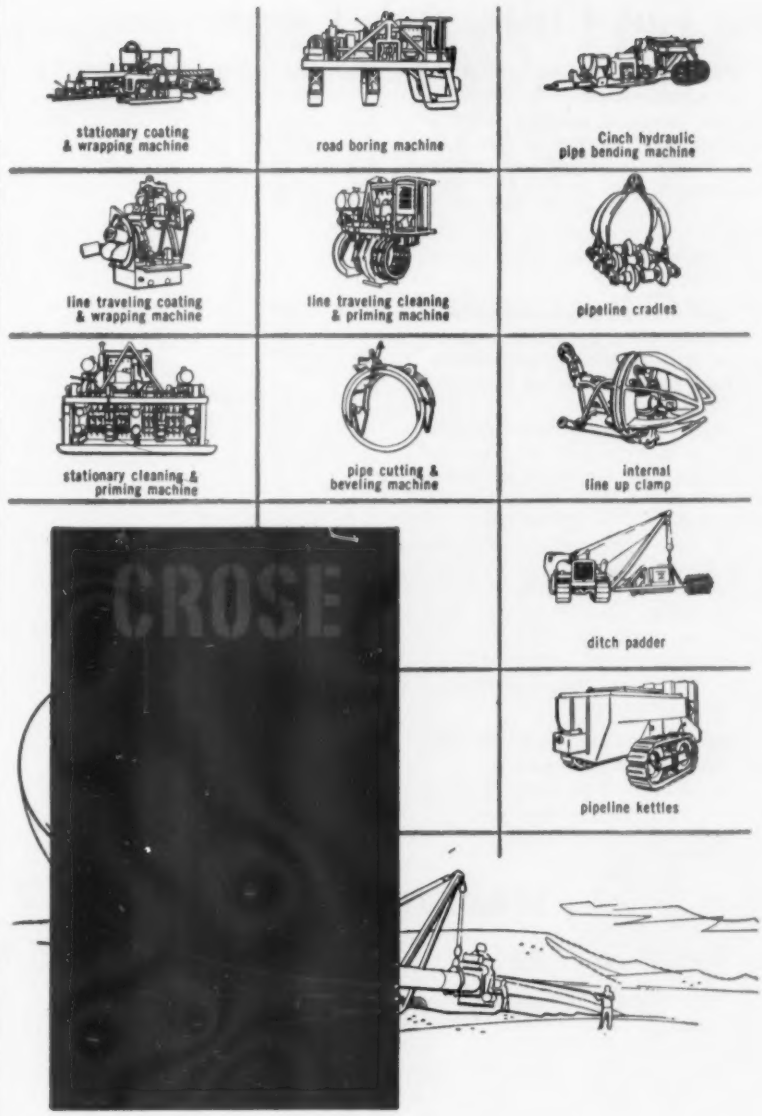
Laying and welding, now scheduled to be completed by the end of the year, are expected to cause no special problems.

After all the preliminary work, Williams Bros. started laying the mainline pipe at the end of April. The contractor says that "insufficient time has elapsed to indicate all the various problems which will be encountered during the construction," but that "no difficulties are anticipated which will prevent the completion of construction before the end of 1958."

Cherokee Progress

The capacity of the Cherokee pipeline system to move products from Oklahoma to the Midwest will be doubled to 60,000 b/d late this summer when this new 12¾-in. line is completed from Ponca City, Okla. to the Tulsa area, about 85 mi. away. The line will replace an old, smaller line between the cities.

A crude line from the Tulsa area to Wood River, Ill., also part of the Cherokee system, will be converted to products service, enabling Cities Service Pipe Line Co. and Continental Oil Co., owners of Cherokee, to move the 60,000 b/d of Midcontinent product to midwestern markets (PW—Feb.7'58,p42).



A COMPLETE EQUIPMENT LINE FOR PIPELINE CONSTRUCTION

The world-wide pipeline construction industry looks to Crose for the most complete line of equipment. Industry experience has proved that Crose equipment is outstanding for efficiency, operating economy — and it is always closer to work in progress because of our many strategic supply points.

New York, N. Y.
Ph. BRyant 9-2236
*Denver, Colorado
Ph. EMpire 6-0332
*Houston, Texas
Ph. MIssion 5-2484
*Elizabeth, N. J.,
Ph. ELizabeth 4-4244
DISTRIBUTOR:
CROSE-CURRAN LTD.
*Edmonton, Alberta
Ph. 3-5135
*Winnipeg, Manitoba
Ph. SPruce 4-1851
*Warehouses in 5 locations

Crose
MANUFACTURING COMPANY, INC.
2715 Dawson Road • Tulsa, Oklahoma • Ph. MAdison 6-2171

To Cut Costs, Ask Employees

What can be done to cut costs of pipeline operations? A Southwest pipeline company recently asked its engineers and mechanics this question. Result: A "flood" of suggestions poured in.

The company prefers not to be identified, since some of the ideas won't be adopted, and others are still being considered.

Broad changes suggested included revamping communications, maintenance, and purchasing procedures.

These suggestions went something like this:

- "We should improve our communications from field to office and reduce the time mechanics must wait before they can make their daily telephone reports."
- "We can cut maintenance costs by performing inspections on a regular, written-schedule basis."
- "Make all cost records available to us so we can know what has been spent on certain pieces of equipment. This will help us shoot at a new cost-cutting record."

Other, more specific ideas were also produced by the request.

- "Reduce field overhaul of engines and pumps. Money could be saved by doing more work in maintenance shops rather than in the field."
- "Equip gaugers with hand tools so they can make minor equipment repairs. These repairs could be made in the course of their work in gauging tanks."
- "Let the company workers do more of the painting and assign less to outside paint contractors."
- "Schedule all repair work as far in advance as possible. This will eliminate rush jobs, overtime, and impaired efficiency."
- "Put a regular driver in each vehicle, and make him responsible for that vehicle's complete maintenance."
- "Install suction liquid-level controllers on field pumps and remove time clocks. Operators don't set them accurately at times, which results in damage to the pumps."
- "Use platinum-type-electrode spark plugs on all natural gas engines. Service life is much longer."
- "Stop telephoning oil refusal messages in to the home office. Make a copy and enclose it with oil-run tickets when they are mailed."

Some of the suggested changes, of course, are too extreme, and would require more money than would be saved.

An example of one the company feels is too radical is the suggestion that reciprocating pumps should be eliminated from all of the mainline stations and replaced with centrifugal pumps.

"Obviously," says a company official, "this suggestion, if followed, would mean a complete revamping of the system and would involve too much cost."

The company feels, however, that "If just one idea turns out to be usable, then we certainly haven't wasted our time."

And it feels that every suggestion is valuable, because it shows that the originator is seriously interested in operating efficiency.

It takes careful examination of each idea to be sure that it will prove beneficial from all sides.

There is the possibility that one group of employees might tend to promote something for their own department to the detriment of other departments.

Too, friction can develop within the departments, since many times the employees differ on the best way to cut costs.

Oil Men Call us "Bankers"

but . . . .

BANKERS CALL US "OIL MEN"

COMPLETE ENGINEERING AND OIL DEPARTMENT

W. L. KENDALL, Senior Vice Pres.
W. L. MORRIS, Engineer
M. R. BILLINGTON, Ass't Vice Pres.
A. D. McCALL, Engineer

IN OIL MATTERS — *IT PAYS TO*

Think 1st of Tulsa

FIRST NATIONAL BANK & TRUST CO.

SINCE 1895

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

1957 OIL PRICES NOW AVAILABLE!

The 34th annual edition of Platt's OIL PRICE HANDBOOK is now available. This is a must for the price-conscious oil man.

Each issue contains the following information:

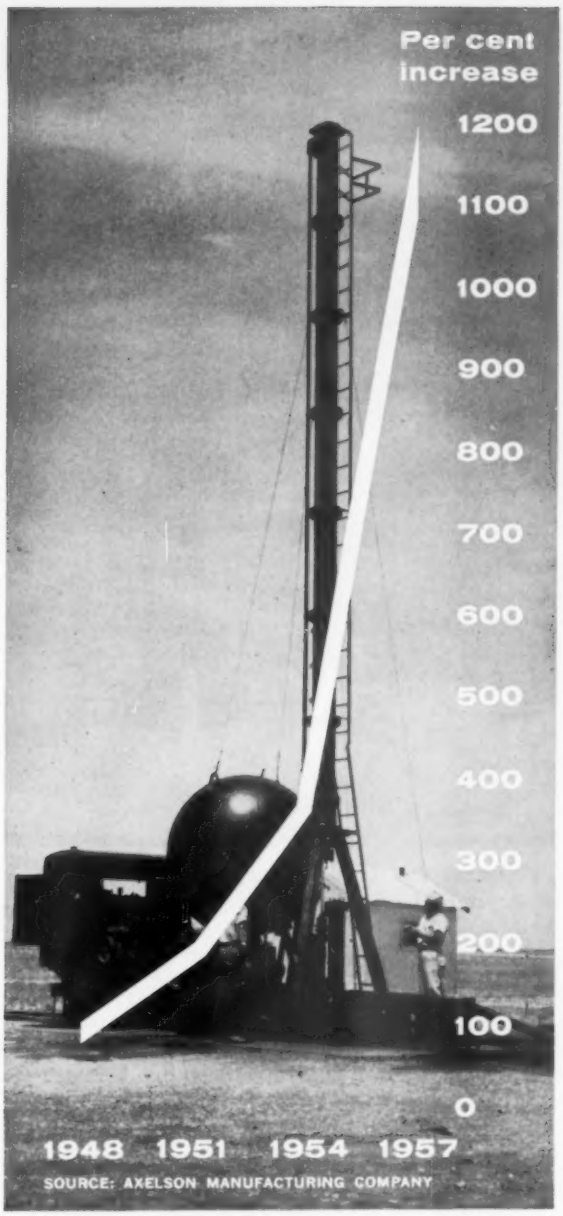
Refinery and Terminal Prices—For the year 1957, all price changes and monthly average lows, average highs, and average lows and highs for all petroleum products at all locations reported daily in the OILGRAM Price Service.

Tanker Rates—Average for the year and previous years of tanker rates as reported in Price Service.

Tank Wagon Prices—This section summarizes the tank wagon prices reported in the weekly supplements to Price Service.

Crude Oil Prices—This section summarizes crude oil prices reported in the monthly supplements to Price Service.

Order your copies of this limited edition now. The price is $20 per copy. Send your orders to OIL PRICE HANDBOOK 330 West 42nd St., 25th Floor, New York 36, N.Y.



BIG GAINS FOR HYDRAX UNITS

Axelson Hydrax Use Shows 10-year Record Growth

Here's why:

- Vastly improved volumetric efficiency
- Sucker rod life extended as much as eight times
- Rod stresses safely increased as much as 30%
- Gas lock eliminated by high compression ratios
- Less wear and tear on subsurface pumps
- Less turbulence at well bottom
- Simple to install.

HYDRAX units are backed by a factory-trained service organization.

Write for HYDRAX brochure

AXELSON

Since 1898 products designed to give oil a lift

There is no economical substitute for quality.

AXELSON MANUFACTURING COMPANY

Division of U. S. Industries, Inc.
6160 So. Boyle Avenue, Los Angeles 58, Calif.

AXELSON PRODUCTS ARE DISTRIBUTED EVERYWHERE

CALIFORNIA: Offices and warehouse in Los Angeles and Long Beach
Service Stores in all principal California fields

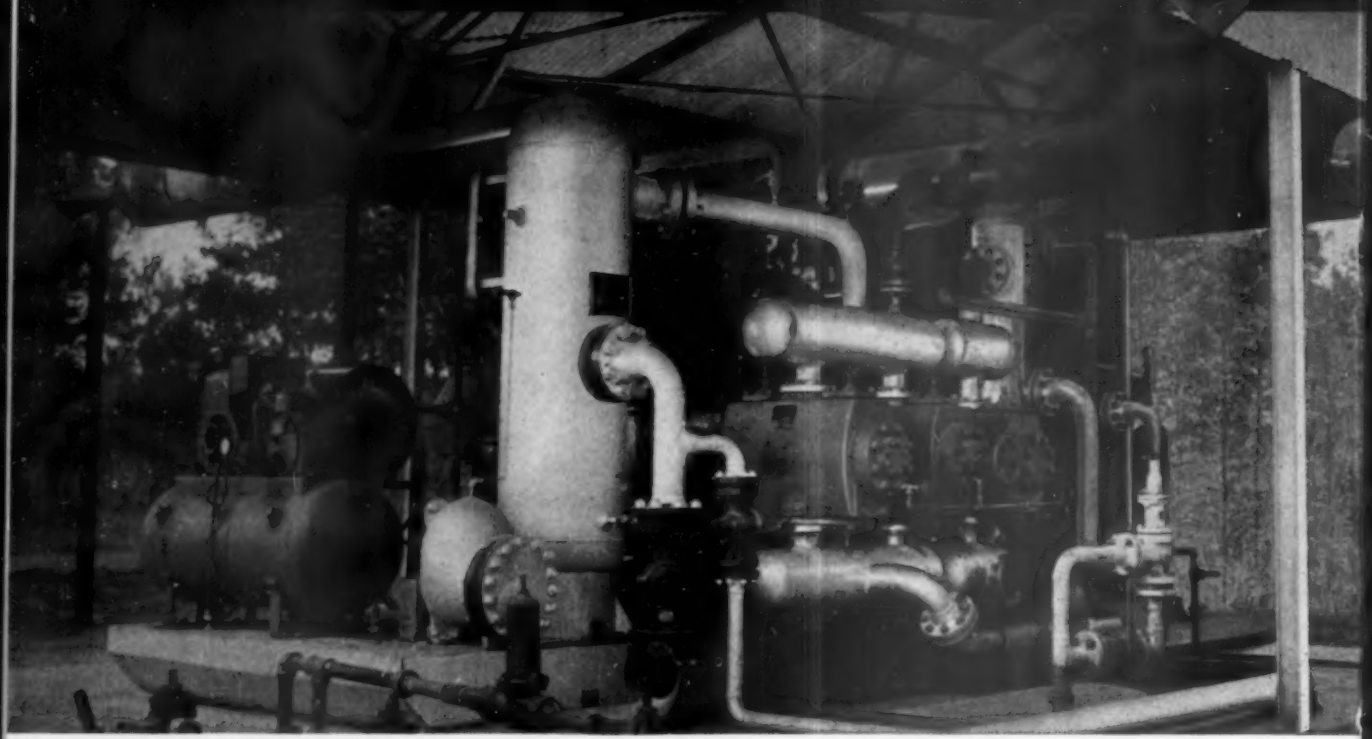
MID-CONTINENT: Offices and warehouse in Odessa, Texas
Representatives in Odessa, Wichita Falls, and Oklahoma City

FOREIGN: Representatives in all major oil producing areas.

© 1958—Axelson Manufacturing Company, Div. of U. S. Industries, Inc.

BEAIRD-INGERSOLL-RAND Packaged Compressor Plant

Lowest Cost Per Horsepower Installed



UNION PRODUCING COMPANY, ET AL. HULL STATION—equipped with a Beaird-Ingersoll-Rand 165 h.p. 6JVG Packaged Compressor. Unit has a Young Radiator with gas interstage, lubricating oil and engine cooling sections. Other Beaird compressors from 120 to 660 h.p.

Unit on Second Service—

FIELD CONVERSION FOR TWO STAGE OPERATION

Union Producing Company, et al., installed their Hull station in 1953 to boost gas in the Carthage Field. Consisting of one Beaird-Ingersoll-Rand 6JVG, 165-h.p. packaged compressor, the station handled 5.9 MMcfd with suction at 800 psig and discharge at 1300 psig.

During five years of production field pressures steadily declined until the original compressor could no longer operate efficiently. Rather than install a new unit it was determined that field conversion of the present compressor to two-stage operation would prove equally effective. This was quickly and economically done in the field. Two 7½-inch cylinders were placed on the first compression stage and a 5-inch cylinder on the second stage. Interstage gas cooling was provided by adding a gas coil at the front of the existing radiator. A scrubber for the second stage was installed and clearance bottle connections were provided on all cylinders.

The unit is now back in operation handling 2.5 MMcfd with suction at 100 psig and discharge at 300 psig. This field conversion will enable the unit to operate fully loaded down through final production of the field.

Beaird's gas engineers are experienced in finding economical solutions to every type of production problem . . . call us today.

THE J. B. BEAIRD COMPANY, INC.
Shreveport, Louisiana
A Subsidiary of American Machine & Foundry Company

SHREVEPORT, LOUISIANA • *Sales Offices: Dallas, Houston, Corpus Christi and Midland, Texas • New Orleans, Louisiana • Tulsa, Oklahoma • Denver, Colorado • Los Angeles, California, and Cie. Ingersoll-Rand, Paris, France.*

BEAIRD INTERNATIONAL, INC. SHREVEPORT, LOUISIANA • *Sales Offices: Calgary, Alberta, Canada • Caracas, Venezuela.*

BEAIRD
another AMF product
PACKAGED COMPRESSOR PLANTS

Packaged Compressors are just one of the many products manufactured by Beaird for the petroleum and petrochemical industries. When you are in the market for new equipment or assistance in developing a specialized product . . . contact Beaird for a qualified appraisal or quotation

What's New / IN TRANSPORTATION

U.S. Atom Tanker Picture Brightens

There's a new flurry of activity growing up around U.S. plans to build an atomic-powered tanker.

Just six weeks ago, the project seemed to be losing its appeal to federal agencies, which, most observers feel, must sponsor such a tanker if it is to be built.

However, the Maritime Administration is now working on detailed specifications to install a boiling-water reactor in the ship. It's felt that the pace at which Maritime is working means that its money problems may be solved.

Also, last week the Maritime Administration and the Atomic Energy Commission announced that they had awarded a contract for development work on a "new type of nuclear reactor and power plant for merchant ship propulsion" to General Dynamics Corp.

•

Jones & Laughlin Steel Corp. has just put into operation another new continuous-weld pipe mill for small-diameter pipe, at its Aliquippa (Pa.) works.

The new mill will make pipe from 1¼-in. to 4-in. in diameter. A similar mill opened by J&L at Aliquippa last year makes pipe from ½-in. to 2-in. in diameter.

•

Cities Service Oil Co. has just put into operation new, faster-unloading dock facilities at its terminal in Baltimore harbor.

The new facilities, which cost the company $700,000, include a new unloading superstructure, which is said to be able to move up to 10-million gal. in 15 hours. The electrically powered unloading system has eleven 8-in. rubber hoses for simultaneous unloading of up to six products.

•

Major shipbuilding is returning to Greece this month with the opening of Stavros Niarchos' new $20-million shipyard at Scaramanga.

Niarchos has set up a new company, Hellenic Shipyards Co., Ltd., to run the yard. When in full operation the yard will be capable of building ships up to 65,000 tons.

The Federal Power Commission has approved Gulf Interstate Gas Co.'s $51-million expansion program.

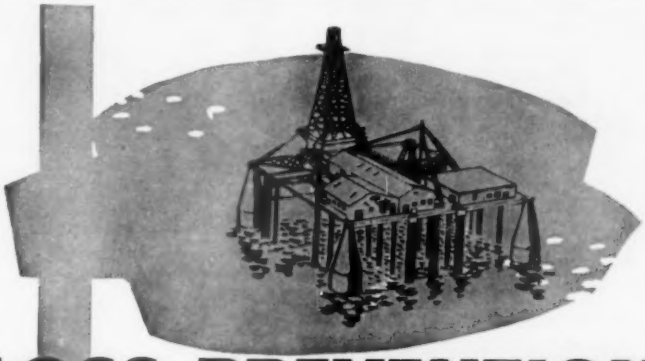
Gulf Interstate will build about 350 mi. of 30-in. mainline loops between Louisiana and Kentucky, and about 54 mi. of 24-in. lateral line loops in Louisiana.

The new facilities are necessary, Gulf Interstate says, to supply the increasing needs of the company's sole customer, United Fuel Gas Co., of Charleston, W. Va.

•

The American Society of Mechanical Engineers is trying to set up safety standards for compressors.

ASME has already come up with a detailed set of standards. It is asking for "criticism and comment" on its proposals from interested engineers. Copies of the tentative draft can be obtained by request on company letterhead to D. M. Shackleford, c/o ASME, 29 W. 39th St., N.Y. 18, N.Y.



LOSS PREVENTION

—included in your offshore oil insurance

YOUR INSURANCE AGENT knows the importance of experienced handling in arranging proper coverage, and he knows how much the proper servicing of losses can mean to you. For this reason he will probably recommend placing the insurance on your offshore oil drilling and production equipment with a specialized market such as Southern Marine.

Southern Marine's Loss Prevention Service, included at no extra cost, is geared to work with you in preventing loss in order to reduce future insurance costs and prevent equipment down-time. Even with full reimbursement for loss or damage, equipment down-time knocks out your income. Ask those who use Southern Marine Loss Prevention Service how well it works.

SOUTHERN MARINE
& AVIATION UNDERWRITERS, INC.

610 Poydras Street, TUlane 5266, New Orleans 12

L. K. GIFFIN, *President* — LEE M. STENTZ, *Vice President* — FRED L. KRIEDT, *Vice President*

Pemex at 'Critical Stage,' Bermudez Says

MEXICO CITY—Mexico's nationalized oil operation is entering a critical stage in its 20-year history, says Antonio J. Bermudez, chief of Petroleos Mexicanos: It urgently needs more working capital, both foreign and local.

Bermudez told PETROLEUM WEEK in an interview last week that Pemex will need much more capital in the immediate future if it is to keep ahead of Mexico's industrial boom. Pemex, he said, would probably be able to eliminate virtually all product imports by the end of this year. This will help alleviate the state oil monopoly's capital-short position—but not nearly enough.

In the past, product imports usually averaged an annual $80-million. Pemex has gradually been whittling down this outlay with expansion of its distribution system to northern industrial areas from its Gulf of Mexico producing and refining centers.

Bermudez and others in Mexico's oil circles and government banks feel that the time is not too far off for a change in the U.S. government's "hands-off" policy on financing for state-owned oil operations in Latin America.

Mexicans point to the accounts of Russian offers and deals in Argentina, Uruguay, and Brazil for sale of oil and oil production equipment.

Pressure suggested by this Russian activity in the Western Hemisphere, together with pressures from Latin American governments, plus just common business sense will all combine, Mexicans feel, to help modify the official U.S. government attitude toward financing for government-owned oil enterprises.

This feeling is also reflected to some degree in Washington, where U.S. policy on the question is now being quietly reviewed (PW—Jun.20 '58,p12).

Insiders say that Pemex has been approached by the Russians with direct or indirect offers of juicy financing deals for purchase of Soviet production equipment.

When asked whether Pemex was considering accepting any such offers, Pemex chief Bermudez said only that offers of financing from "other than traditional" sources had been declined.

Government banking circles would like to see some long-term U.S. loans for Mexico's national oil industry from government or private sources.

ANTONIO J. BERMUDEZ, head of Petroleos Mexicanos, Mexico's state oil monopoly.

They say Pemex is faced with two big equipment bottlenecks in the near future—in the refining and transportation fields. Refinery equipment is particularly needed, according to bank officials. Government oil men hope for Export-Import Bank loans to buy U.S. equipment.

Possibly the first sign of long-term "loans to come" is the $20-million deal under which three U.S. banks will help to finance a 606-mi. natural gas line (PW—Jun.27'58,p54).

The banks—Chase Manhattan, Chemical Corn Exchange, and Bank of America—have agreed to grant the $20-million loan to the government-controlled steel company, Altos Hornos, which will supply pipe for the line from Tabasco to Mexico City. This is half the estimated $40-million cost of the line, which would be built by Pemex.

Pemex officials say this shows that U.S. banks believe Mexico's oil operation is good business. Pemex will directly benefit from the loan, it is pointed out, though another government outfit will get the money.

Bermudez declared that Pemex not only must get foreign equipment loans, but also must put itself on a paying basis locally through increases in product prices, which are kept at low, government-pegged levels.

The Pemex director said most product prices in Mexico would have to be hiked 30% to put Pemex on a sound basis.

An increase in product prices—which is considered bad politics—might safely be effected by Mexico's outgoing President Ruiz Cortines before he leaves office in December, insiders claim.

Such a gesture, they feel, would leave the incoming president politically in the clear. This is apparently what Pemex is hoping for, too.

There is talk in some political circles that Bermudez might not be around to see the changes he wants in Pemex' price structure.

After 12 years of serving the state oil entity, Bermudez may be out after December, according to talk around Mexico City. The feeling is that Adolfo Lopez Mateos, who is expected to win the presidential election this week, will put in his own man.

There is a chance that the Pemex job may go to Ernesto Euruchurtu, mayor of Mexico City and a powerful force in the government party.

Euruchurtu is an energetic and forceful man, who moves fast and hard when he believes something has to be done, whether or not the action is a political or diplomatic one. Those who know him say he is somewhat "anti-foreign," but has been fair with foreign business in Mexico City.

Mexican industrialists are waiting to see just what stand the new government and Pemex will take on the petrochemicals industry.

Several big foreign and Mexican companies are reportedly ready to start

MILLIONS OF STOPPERS

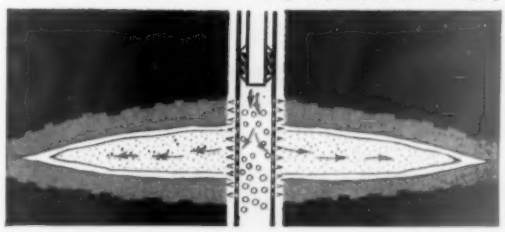
against fluid loss . . . thousands of feet below!

There's a real guard against fluid loss when fracturing fluids are treated with Adomite. Its millions of tiny particles temporarily seal the pores of the matrix rock. This means that fluids can be injected under greater pressures, at higher injection rates . . . and it means more profits, too! Adomite makes it possible to get an extended, deeper fracture . . . with minimum sanding out.

Adomite leaves no permanent seal on the fracture wall. There is no evidence that the formation has ever been sealed. And here are other important reasons why more producers *standardize* on Adomite:

- Obtains larger fractures per volume of treatment, or the same-sized fracture with a lesser volume of fracturing oil.
- Decreases friction loss because of the low viscosity of Adomite-treated fluids.
- Utilizes your own lease crudes . . . saves transportation costs.
- Assures acceptance by the pipeline companies for Adomite-treated lease crudes.

©1958, Continental Oil Company



For greater profits . . . fracture with

ADOMITE®

Stainless-Lined . . .

TO ARREST HIGH-TEMPERATURE CORROSION

Among the many spherical structures Graver has fabricated in its hundred year history, these reactors for Socony Mobil Oil Company's refinery at East Chicago, Indiana, are typical of the craftsmanship required to assure long, trouble-free life under sustained high temperature and high pressure. To minimize corrosion at operating temperatures of 980° and 600 psi, Type 321 stainless was used for the inner liners, catalyst supports, inlet vapor distributors and drain scoops. The shells were made from 1¾" A201 Grade B firebox quality carbon steel to which an intermediate lining of concrete was applied. Graver's skills in working with all types of alloys assure long life for processing equipment that must operate continuously under high temperatures and high pressures.

GRAVER®
ALLOY DIVISION

Building for the Future on a Century of Craftsmanship in Steels and Alloys

GRAVER TANK & MFG. CO., INC.
EAST CHICAGO, INDIANA • New York • Philadelphia
Edge Moor, Delaware • Pittsburgh • Atlanta • Detroit • Chicago
Tulsa • Sand Springs, Oklahoma • Houston • New Orleans
Los Angeles • Fontana, California • San Francisco

into petrochemicals if the government decides it does not want to nationalize this sector.

Insiders say that because Pemex doesn't have enough working capital now, it is likely that private capital—both foreign and local—will be welcomed into petrochemicals. But there is a good chance that government-operated companies will also enter this field. Nothing definite will be known, however, until the new government takes hold.

Shah Invites More U.S. Capital to Iran

Iran is "anxious that American capital should play an active part in its economic rehabilitation," the Shah of Iran said in Washington last week. "The present opportunity may not present itself again."

Speaking to the National Press Club, Shah Reza Pahlevi said that Iran, now "on the eve of its greatest development," has "unlimited" scope for foreign capital investment, particularly in oil.

"The Middle East is bright with the future wealth of oil and dark with the abundance of misery," the Shah said. "In Iran, we are striving to use our vast oil resources wisely . . ."

Hailing Iran's recent new oil agreements, the Shah said: "We have managed to set a new pattern of developing Iran's resources—without creating a synthetic international crisis."

Demagogues and so-called nationalists, the Shah said, could not have envisaged the success achieved in these agreements "even in their wildest dreams."

The Shah described the new pact with Standard Oil Co. (Ind.) as "far superior in scope and substance" to that with Italy's AGIP Mineraria. (Both are joint-venture agreements with Iran's national oil company. The U.S. company also paid a substantial bonus.)

The Indiana pact, the Shah said, "proves Iran's predilection towards American interests so long as Iran's national rights are safeguarded."

The Shah attributed the "new oil agreements to "positive nationalism" —a constructive force—as opposed to destructive "negative nationalism," which Iran now rejects.

Earlier, Iran's half-century-old national awakening had resulted in nationalization of the oil industry in 1951, when it "gradually lost its sense of direction and brought Iran to the brink of disaster."

HYCALOG

WHAT HYCALOG DID ABOUT THE PASSED-UP SHOW

CONTINUING RESEARCH FOR LOWER COST EXPLORATION

A known producing area in Hidalgo County, Texas, had been passed up in 1954 by several well logging companies — but HYCALOG research engineers weren't satisfied until they discovered why.

Here's what they did:

Transported a CONSOLIDATED ELECTRODYNAMICS mass spectrometer to the well site . . . *the first field application of the spectrometer.*

Worked with BECKMAN INSTRUMENTS in developing a special portable mass spectrometer (the radio frequency analyzer) . . . *the first ever designed specifically for well logging.*

Developed the GAS CHRONOFRAC (patent pending) analytical recorder and included it as part of regular HYCALOG services . . . *at no extra cost.* With this instrument continuously repetitive analyses of samples are run on one-minute cycles. And component analysis is completed in less than two minutes . . . many times the speed of conventional chromatographic analysis.

Now . . . as a result of HYCALOG research . . . *the chance of running past a show has been virtually eliminated.*

Ask your HYCALOG *representative for information about* GAS CHRONOFRAC *analysis.*

Hycalog, Inc.

505 AERO DRIVE
SHREVEPORT, LOUISIANA

BRANCH OFFICES IN PRINCIPAL OIL PRODUCING AREAS

DIAMOND CORING • DIAMOND BITS • WELL LOGGING • CORE ANALYSIS

What's New / AROUND THE WORLD

VENEZUELA—The first acreage relinquished from the 1956-57 crop of concessions has been turned back to the government by Creole Petroleum Corp.

After drilling one exploratory test, Creole gave up 98,800 acres along the Colombian border, for which it had paid $1.9-million in bonuses in 1956.

Included were 44,460 acres on the Goajira peninsula in a shoreline strip along the Gulf of Venezuela, where the sole test was drilled last year; and 54,340 acres in Apure state.

Creole, like all other companies, had been required to take exploration leases on the undesirable border acreage along with more attractive tracts it was granted elsewhere in Venezuela.

Twelve companies or groups still hold 789,000 acres of the border concessions, for which they paid a total of $15.6-million in exploration bonuses in 1956-57.

•

SAHARA—The projected pipeline outlet for the Edjele oil area near Libya is now seen as a 24-in. line, instead of 12-in., as originally planned by Creps (Cie. de Recherches et d'Exploitation de Petrole au Sahara).

Reason for the change in planning is that recent discoveries have raised the Shell affiliate's hopes of establishing 100,000 b/d production in the area by 1961 (PW—Jun.27'58,p51).

Meanwhile, the French government has reached a decision in principle on a Tunisian route for the line. An announcement on this is expected shortly.

•

LIBYA—An unusual partnership between an affiliate of a U.S. major and a foreign independent will give a German refiner an interest in oil exploration in Libya.

Socony Mobil Oil Co. announced last week that the Gelsenberg interests of West Germany will acquire 25% interest in exploration rights held by Mobil Oil of Canada, Ltd.

Gelsenberg, a refiner and marketer, is already associated with Socony in West Germany. Gelsenberg processes Socony's German crude production, and the two will share a 40% interest in the projected 150,000 b/d pipeline from Rotterdam to Germany's Ruhr (PW—May2'58,p40).

Subject to approval by the Libyan government, the new agreement will make Gelsenberg the first German entrant in Libya. Gewerkschaft Elwerath—an independent producer in Germany—has applied for an oil concession there on its own (PW—Mar. 28'58,p67).

•

Drilling & Exploration Co., of Dallas, is starting its own exploration program in Bolivia while expanding its Eastern Hemisphere contract drilling operations into Iraq.

The company announced that exploration is now being started in Bolivia's Zone I on a 1.2-million-acre concession held by a recently formed subsidiary, Bolivian Petroleum Corp.

At the same time, Drilexco said it will ship two new rigs to Iraq under a contract with Iraq Petroleum Co. The Dallas firm already has contract drilling operations in Arabia, Turkey, Nigeria, Italy, and Holland.

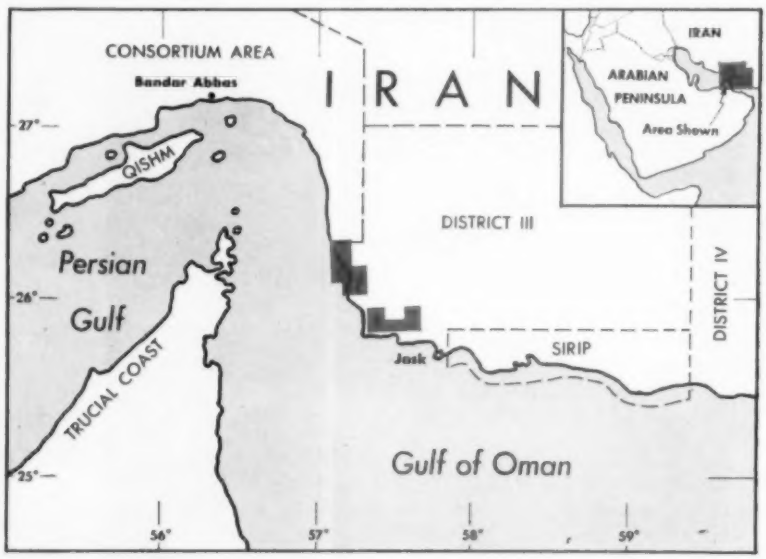
•

ISRAEL—The government is setting up a national oil exploration company as a result of the slowdown in exploration by private companies.

Under a recently announced cabinet decision, the public will be invited to subscribe to stock in the new company in the amount of 20-million Israeli pounds ($11.2-million). One-fourth will be issued as registered securities and the rest as bearer stock.

At a later stage, the government also plans to float a 10-million-pound bond issue, with exact terms yet undecided.

Meanwhile the Heletz field, which has produced around a total of only



New Iranian-Canadian Oil Rights Shown

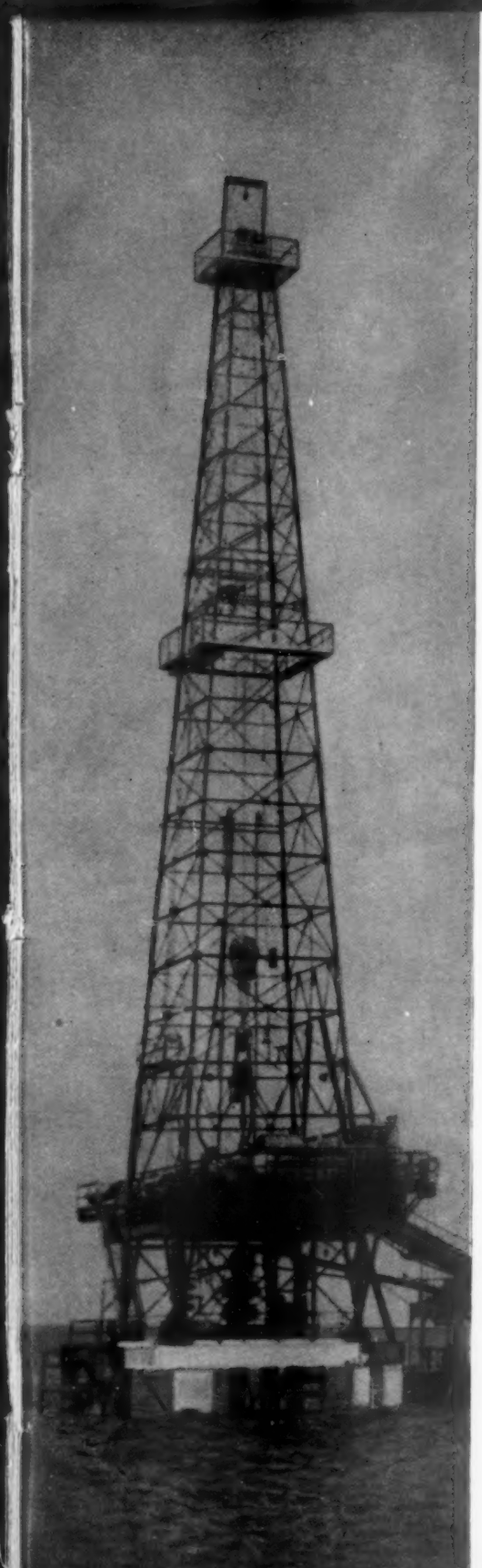
The new District III oil rights won in Iran by Sapphire Petroleums, Ltd., under its no-bonus 50-50 partnership agreement with National Iranian Oil Co. are shown here in an official map released in Teheran last week.

The acreage totals 386 sq. mi. in two small tracts (one partly offshore), west of the District III block granted last year to Sirip, the Iranian-Italian partnership company.

Under the pact now awaiting approval by Iran's Senate, the Canadian-based Sapphire is obligated to spend $18-million on the acreage over the full 12-year exploration period. Of this, $8-million must be spent in the first four years (PW—Jun.28'58,p54).

The Canadian independent is basically a royalty company, with negligible production in Canada and the U.S. It was incorporated in Toronto in 1951 with $7½-million authorized capital. It now has interests in about 150 producing oil wells in Alberta, Wyoming, Texas, Kansas, Illinois, and Indiana. President is M. Goldhar; secretary-treasurer is Benjamin Pass; and chief of production and development is Victor Spiegelmann.

The company's U.S. interests are managed by Sapphire American Petroleums, Inc., a subsidiary based in Newcastle, Wyo.



RAYMOND

to erect 50 offshore derrick platforms for

MENE GRANDE OIL COMPANY

Mene Grande Oil Company awarded Raymond* this important contract, covering a 2 year period, because of the impressive results of Raymond's Prestressed Concrete Cylinder Piles.

A pioneer in Venezuelan oil development, Mene Grande is all too familiar with the particular problems encountered in offshore drilling in Lake Maracaibo. The lake's water is highly corrosive, and, in addition, the area is struck frequently by raging windstorms called *chubascos*. Not only are Raymond Prestressed Cylinder Piles impervious to damage by marine life and aggressive water, but they also offer greater structural strength, increased load capacities and longer life. Another factor which was important in Mene Grande's decision, is that Raymond Prestressed Cylinder Piles are manufactured right at the job site . . . providing a substantial saving in both time and money.

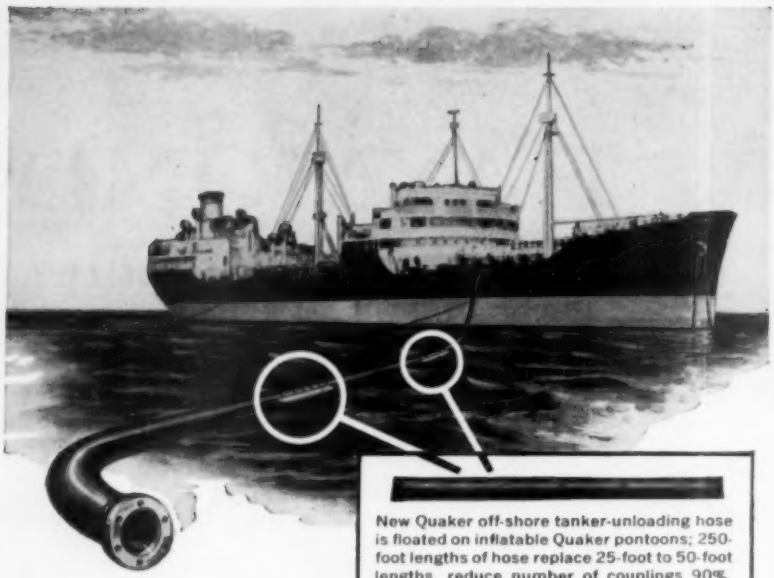
Raymond is proud of its role in assisting the oil industry over the past 50 years—also for its part in aiding the economy of Venezuela since 1926 when Raymond opened its office in this abundant country. You'll find Raymond foundations supporting offshore oil drilling rigs, tanker wharves, cat-crackers and storage tanks just about everywhere oil is drilled and refined. May we also serve you?

**In a joint venture with Brown & Root.*

RAYMOND INTERNATIONAL INC.

140 CEDAR STREET, NEW YORK 6, N.Y.
Branch Offices in Principal Cities of the United States; Subsidiaries in Canada, Central and South America and other countries.

FOUNDATIONS FOR THE STRUCTURES OF AMERICA · COMPLETE CONSTRUCTION SERVICES ABROAD



New Quaker off-shore tanker-unloading hose is floated on inflatable Quaker pontoons; 250-foot lengths of hose replace 25-foot to 50-foot lengths, reduce number of couplings 90%.

SMART WAY TO FLOAT SHIP-TO-SHORE HOSE:

Use this Quaker floater rig

The old nuisance of floating ship-to-shore oil hose on empty drums is finally licked. And Quaker licked it.

Now, with Quaker's new floater assembly, you do away with bulky, abrasive 55-gallon-drum pontoons . . . you reduce the number of hose couplings as much as 90% . . . and you make the loading or unloading of a tanker off shore a relatively simple job.

This assembly consists of a reel that propels 250-foot lengths of Quaker hose to or from the ship, floated on revolutionary *inflatable* Quaker pontoons which, deflated, take up only a quarter of the space once needed to store inconvenient, rustable metal drums.

It's a beauty of a time- and money-saver! Find out more about the Quaker-Porter Floater Hose Installation. Ask your Quaker industrial distributor for full information, or write *Quaker Rubber Division, H. K. Porter Company, Inc.; Philadelphia 24, Pa., or Pittsburg, California.*

19-foot Quaker pontoon hose folds up into less than ¼ the space taken up by drum.

H. K. PORTER COMPANY, INC.

QUAKER RUBBER DIVISION

700,000 bbl. thus far, remains Israel's sole producing field, currently meeting about 10% of the country's needs. Its limited extent has dampened the enthusiasm it excited when oil was first discovered in Israel three years ago.

•

VENEZUELA—Loading capacity of Mene Grande Oil Co.'s Puerto La Cruz terminal has been boosted to over 1-million b/d with completion of a new deep-water berth that can handle the biggest tankers afloat.

The new Berth No. 5 has a dockside depth of 60 ft. Loading capacity is 40,000 bbl. an hour.

The $4½-million berth consists of a 130-ft. central platform of concrete, and two lateral 65-ft. mooring platforms. A short jetty carries loading lines from shore to the central platform.

Puerto La Cruz is now Venezuela's biggest loading terminal. In addition, the port handles the greatest variety of crudes.

Mene Grande recently completed a new 87-mi., 30-in. crude pipeline from Oficina to Puerto La Cruz. The $11½-million line raises capacity of the company's pipeline system in eastern Venezuela to around 580,000 b/d.

•

IRAQ—The government and Iraq Petroleum Co. started discussions in Baghdad this week on a substantial increase in oil exports now that the pre-Suez level has been restored.

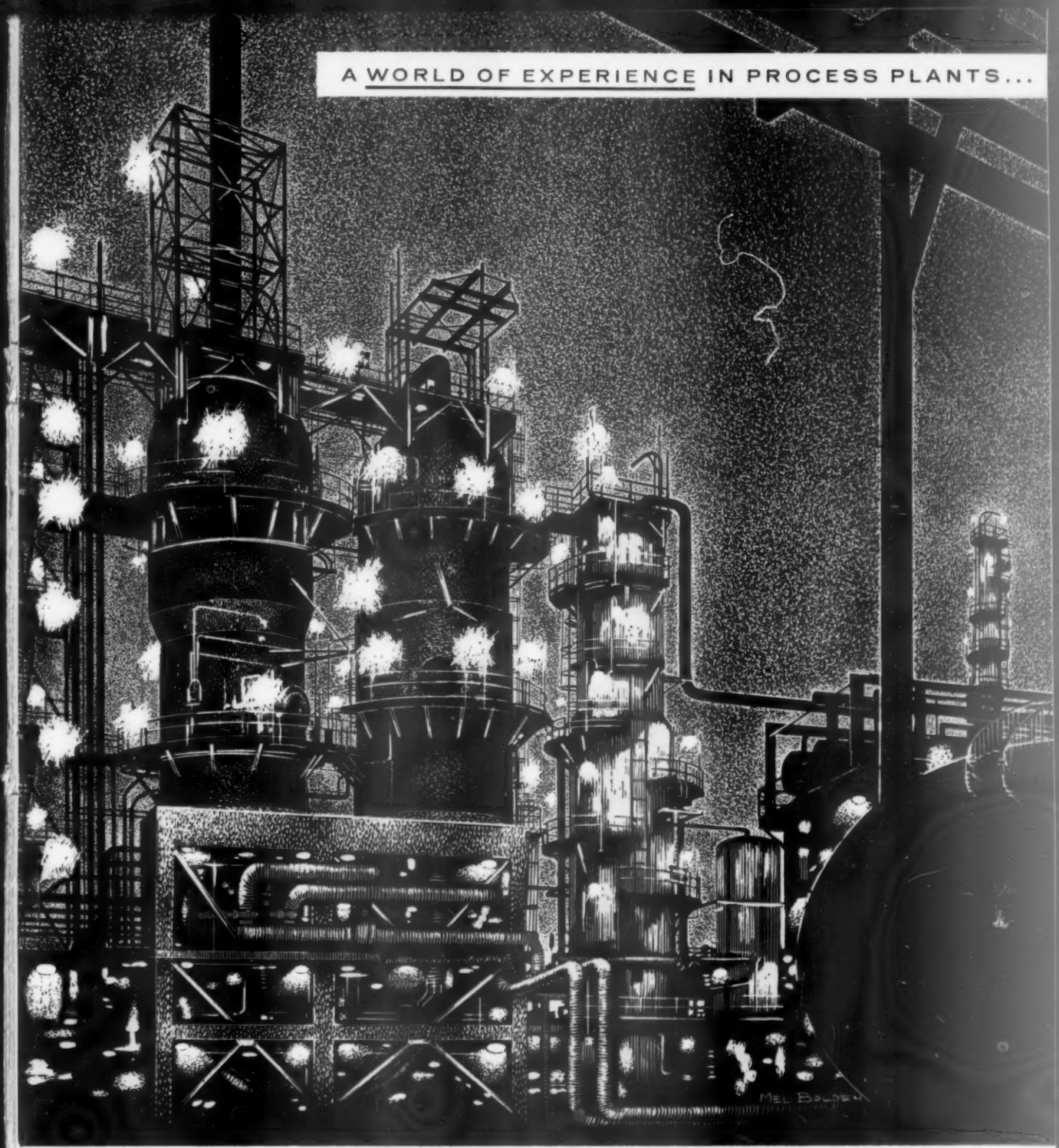
The government wants an increase in oil revenues. It told the company it wants either a big step-up in oil production or an upward revision in IPC's rate of payments.

The discussions will include a "whole host of subjects," according to an IPC spokesman in London, including the question of IPC's surrendering unexplored parts of its concession (PW—Jul.4'58,p34).

Meanwhile, the first stage in a planned increase in existing pipeline capacity will increase IPC's oil flow to the Mediterranean to a 560,000 b/d rate early next year.

IPC announced last week that this will be accomplished with further looping in its pipeline system, now that it has restored the 500,000 b/d pre-Suez rate of exports to the Mediterranean. This was accomplished with additional pumping capacity and some looping.

Of the total, 350,000 b/d is flowing through IPC's 30-in. line to its Syrian terminal in Banias, and 150,000 b/d through its 12-in. and 16-in. lines to Tripoli, in Lebanon.



FOSTER WHEELER *in the Far East...*

In JAPAN — a 110 T/D Ammonia plant
In INDONESIA — major modernization at Palembang
In the PHILIPPINES — a complete "grass roots" refinery
In BURMA—at Syriam, a new crude unit and other facilities

Ishikawajima Foster Wheeler Co., Ltd., in Tokyo, provides complete design and construction facilities for petroleum and petrochemical projects.

DESIGN
ENGINEERING
CONSTRUCTION

Petroleum Plants
Petrochemical Plants
Chemical Plants

Foster Wheeler Corporation, 666 Fifth Ave., New York 19, N.Y.

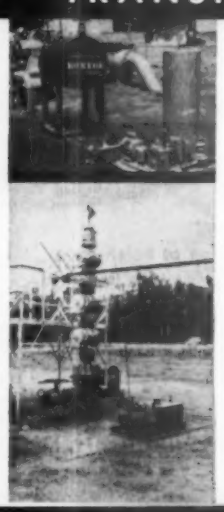
NEW YORK • LONDON • PARIS • ST. CATHARINES, ONT. • TOKYO

KONTOL
CORROSION CONTROL

The Tretolite Company has pioneered and maintained leadership in the application of organic corrosion inhibitors throughout the petroleum industry. No other organization has Tretolite's wealth of experience in their use, manufacture, general know-how or service facilities.

Tretolite corrosion engineers, laboratory testing facilities and research are always available to aid you in combating corrosion problems. A call brings you this service—at no obligation.

PRODUCTION • REFINING • TRANSPORTATION



TRETOLITE COMPANY

DIVISIONS OF PETROLITE CORPORATION

369 Marshall Avenue, Saint Louis 19, Missouri
5515 Telegraph Road, Los Angeles 22, California

Chemicals and Services for the Petroleum Industry

Demulsification • Desalting • Corrosion Inhibiting • Paraffin Removal • Scale Prevention • Water De-oiling • Injectivity Stimulation • Metal Deactivators • Additives

KAP-58-1

KONTOL

ORGANIC CORROSION INHIBITORS

The Business Outlook Is Definitely Brighter

Key economic indicators point to a brighter second half for 1958. Recent shifts in the economy point to the end of the business decline and give some promise that an upturn is soon to come.

* * * *

Industrial production, a heavy source of oil demand, turned around in May after eight consecutive months of decline. The most significant feature of the turnaround was that the gain came in almost all lines of durable goods—a sector of the economy that had been particularly badly hit in the early months of the recession. This shift can be interpreted as a harbinger of better things to come—certainly for the final months of 1958.

Private housing starts, on a seasonally adjusted annual basis, have pushed over the million-units mark. Applications for FHA commitments are on the rise, and requests for VA appraisals of new home construction are sharply higher than they were at the beginning of the year. Both of these add up to even more of an increase in residential construction in the months ahead.

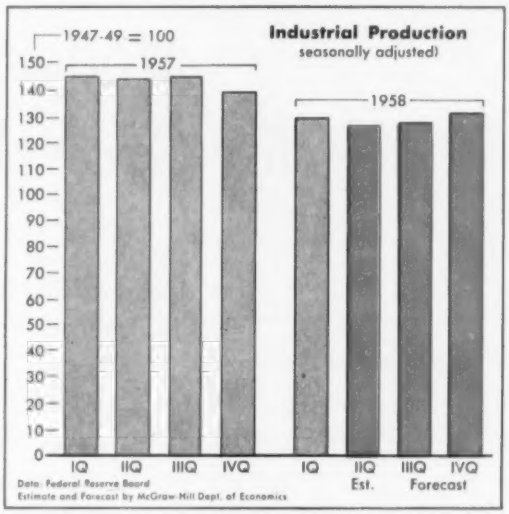
Contract awards for heavy engineering construction are increasing. The large dollar volume of contracts awarded in June pushed the total above the corresponding 1957 figure. Public construction contracts are running about 5% ahead of a year ago, to help ease the downward drag of the substantial drop in industrial contracts. The over-all result, on the basis of the current heavy volume of new contracts and the present backlog of projects, should be that the heavy construction industry will be running at near-capacity levels for the remaining months of 1958.

The big drop in capital spending has already taken place, and, although there will be some further declines, they will be of much smaller degrees. It now seems likely that by the end of 1958 or the beginning of 1959, capital expenditures on plants and equipment will be leveling off, and the downward trend of the past half year or more will end its drag on business.

* * * *

Not only are these shifts in production, housing, and capital spending important for oil in themselves, but they are having other beneficial results that will give a boost to demand.

As production and housing figures move upward, so will employment. Most of the big drop in employment occurred in manufacturing—and nearly all in durable goods. Not only will the improvement in industrial production reduce the severity of unemployment, but a pickup in farm, housing, and other construction work has already added to the number of people at work. Total employment has been given a good boost by the sharp upturn of outdoors employment.



Of course, graduating students have swollen the lists of those seeking work. Each year these new entrants into the labor force have to be absorbed, and this June was no exception.

But the significant fact is that the total number of people employed is rising.

* * * *

Along with the turnaround in industrial production, housing, construction, and employment, personal income has been rising for almost four months. A large part of the rise in the late spring was due to the increase in the number of jobs. In the months before, the rise in income was due in large part to increased unemployment benefits. Now increased federal pay will add over a billion dollars to personal income, which has already rebounded to within $3-billion of the all-time peak of last August, and by early fall may well hit a new peak.

This upsurge in income brightens the outlook for purchases that can be and have been postponed—new cars and other things that are not so eagerly bought when pocketbooks are shrinking.

More production, more homebuilding, and higher personal income point the way to a brighter outlook for business as a whole—an outlook in which petroleum is bound to share.

Modernize Now for Growth and Profits

A Special Report from McGraw-Hill to America's Business Executives

THE EDITORS of all McGraw-Hill publications are now devoting their full energies to documenting what needs to be done *now* to assure success in the 1960s for:

1. Individual companies in the key areas of business and industry these publications serve
2. The business community as a whole
3. The nation—in its fateful economic competition with the Soviet Union. The U. S. State Department has characterized this economic challenge as "the most dangerous of all" confronting us.

These editorial features will concentrate on what can be done *now* by modernization and improvement of plant and equipment to raise productivity and insure profitable growth ahead. They will appear early this fall in our 34 business and technical magazines, to assist industry in planning for the future.

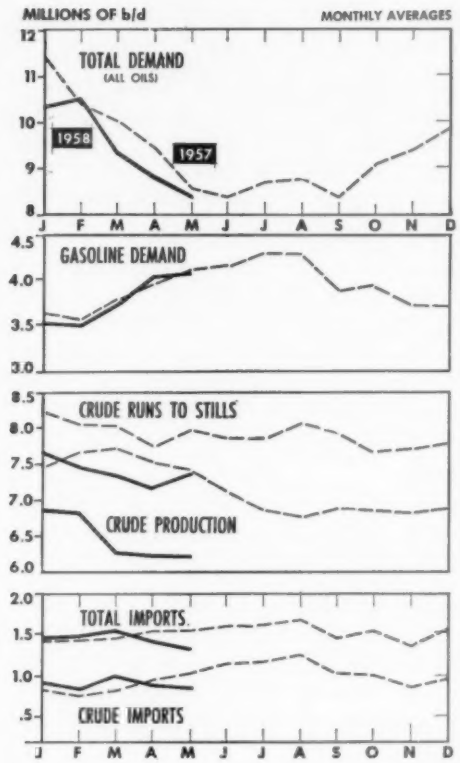
We believe this special editorial undertaking by all of our publications, working as a team, will prove another landmark in our continuing efforts to speed America on the road to full economic recovery and sustained economic growth.

Donald C. McGraw

PRESIDENT

PETROLEUM WEEK'S

Fingertip Figures



Supply-Demand Figures for June

(millions of b/d)

	June 1958	% Change from year ago	6 Months 1958	% Change from year ago
Total Demand (Inc. Exports)	8.606	+ 2.5	9.271	— 4.4
Gasoline	4.251	+ 2.3	3.828	— 1.3
Distillates (Inc. Kerosine)	1.494	+15.6	2.338	+ 0.1
Residual	1.261	— 7.7	1.528	—11.2
Total Supply	8.845	— 6.8	8.838	—10.0
Domestic Crude	6.344	—10.7	6.446	—14.0
Nat. Gas Liquids	.800	+ 3.2	.798	— 2.6
Total Domestic	7.144	— 9.4	7.244	—11.8
Crude Imports	1.066	— 7.1	.946	+ 2.8
Total Imports	1.701	+ 5.9	1.594	— 6.0

RUNS TO STILLS

Latest week	7.461
Previous week	7.541
Year ago	7.840

CRUDE PRODUCTION

Latest week	6.424
Previous week	6.373
Year ago	6.952

TOTAL IMPORTS

Latest week	1.679
Previous week	1.529
Year ago	1.641

CRUDE IMPORTS

Latest week	1.046
Previous week	.852
Year ago	1.269

Total demand for the first six months of the year turned out just about as predicted—averaging 9,271,000 b/d, down 4.4% from last year.

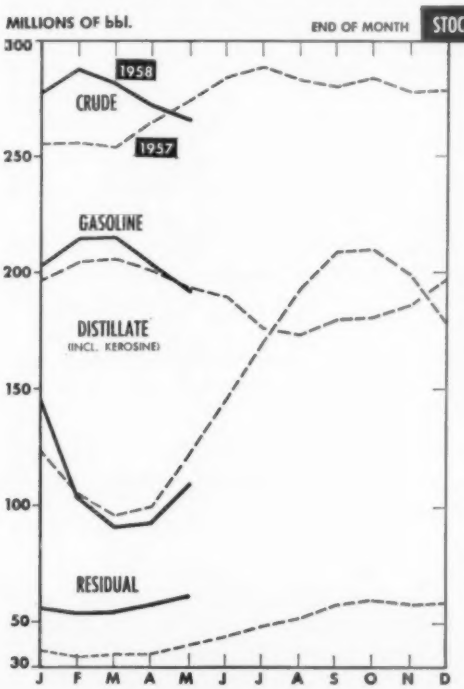
Demand for gasoline, residual fuel oil, and the total of the minor products ran below the 1957 first half, when the emergency exports to Europe boosted demand substantially. Total demand for distillates, aided by a 6.7% gain in kerosine, ran slightly ahead of last year.

Domestic demand for the first half showed a gain of 0.8% over last year, averaging 9,008,000 b/d.

Domestic consumption of gasoline, averaging 3,762,000 b/d, was unchanged from last year. Demand for distillates gained 6.8% to average 2,275,000 b/d. Residual demand fell 7.8%.

Total demand in June ran 2.5% ahead of last June, and total supply for the month was down 6.8%. Imports of crude, while 7.1% under last June, exceeded the voluntary imports program quota.

Preliminary API figures placed crude imports at 1,066,000 b/d, compared with the quota of 984,000 b/d.



STOCKS: CRUDE

Week-ended 6-28	258.1
Previous week	260.7
Year ago	277.0

GASOLINE

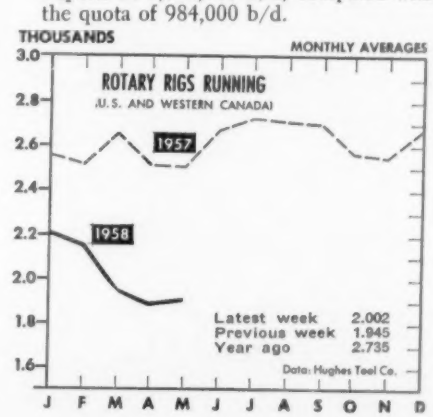
Latest week	183.4
Previous week	186.5
Year ago	188.5

DISTILLATES

Latest week	131.0
Previous week	127.2
Year ago	143.2

RESIDUAL

Latest week	64.8
Previous week	63.7
Year ago	44.7



The Market Trend

AT-A-GLANCE PETROLEUM WEEK

Strong-Weak Products; Loose-Tight Crude

Products derived mostly from domestic crude continued to strengthen this week. Chicago heating oil prices pointed up by 0.25¢. Mid-Continent gasoline is firm. There are no discounts to be found on regular-grade gasoline and No. 2 fuel at the Gulf.

But products with a strong foreign-crude flavor are just as loose as ever. A Philadelphia seller this week offered a two-year ceiling on No. 6 fuel, delivered in transports, at 6.09¢ a gal. (12¢ a bbl. below f.o.b. tank car). A Richmond (Va.) metal plant was offered distillate at 1.17¢ off tank car. A New Jersey marketer is giving a 0.2¢ "month-end-allowance" on heating oils.

And this is why you hear so much about cat cracking stocks, cat reformer stocks, and bottoms. For these are the building blocks to scale the crude-imports barrier. This week, term shipments started on souped-up fuel oil shipments from Venezuela to Houston. You hear of imports of 60-gravity diesel—which is just one crank in a reformer away from gasoline. East Coast marketers jokingly refer to Bachaquero crude imports as "District Zero"—because they don't seem to count as anything.

Thus, the basic struggle continues: Can cuts in domestic allowables shore up the products structure? Or will the pressure of spare refining capacity and ample supplies of foreign crude and products drag the price level down? The issue still seems very much in doubt.

One thing seems certain: Nobody is going to be happy for quite a while yet. Gulf Coast prices for fuel oils can't rise much without actually topping some of the selling prices in the East. Any new quotas on imported crude will be promptly sold. Even the established importers can't rest easy, for competitors will be coming up with new and more attractive deals almost every day.

As one East Coast marketer put it: "If you don't think the situation is mixed up, just try and write a contract." All indications this week are that many, many contracts are still in the talking stage.

New Market; New Terminal:

A New York marketer has entered the ships' bunkering business at the mouth of the St. Lawrence Seaway. Nepco, Ltd., this week opened its 560,000-bbl. terminal at Sydney, Nova Scotia, to furnish bunker oil and diesel to vessels. Nepco is a subsidiary of New England Petroleum Corp.

Firmer 'Gas' In Los Angeles:

Gasoline markets jumped 1¢ to 2¢ at the rack in Los Angeles last week, and there were rumors that one West Coast major was looking at the Gulf Coast for three cargoes for summer delivery.

Regular-grade at the rack moved up from 11.5¢ to 12.7¢. The Hancock fire curtailed supplies in the area. Too, some refiners are holding down their runs because of surplus bunker oil.

A New Crude Oil Deal:

Any day now you'll be hearing news that Argentina has wrapped up a $35-million crude oil deal with Columbia. The government isn't talking; in fact, a long-delayed press conference on oil by President Frondizi is still being put off.

The Market Place

AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All Prices as of July 7

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....12.125-12.5
- **Gasoline, 92 oct reg....10.75†-12.375**
- Kerosine....8.625-8.875
- Heating oil, No. 2....8.125-10.25
- Gas oil, 48-52 d.i....8.375-10.5
- Fuel oil, bunker "C"....$2.25

Caribbean, cargoes
- Avgas, Grade 100/130....16
- Gasoline, 93 oct research prem....10.75
- Gasoline, 87 oct research reg....9.875
- Gasoline, 79 oct research....9.125
- Gasoline, 70-72 oct motor method....9
- Kerosine....8.875
- Heating oil, No. 2....8.125
- Gas oil, 48-52 d.i....8.375
- Fuel oil, bunker "C"....$2.25

New York Harbor, barges
- Kerosine....9.35-9.6
- Heating oil, No. 2....8.85-9.1
- Fuel oil, No. 6....$2.57-2.65

Okla-Group 3, northern shpt, bulk
- Gasoline, 89 oct reg....11.5-12
- Kerosine....9.5-10
- Heating oil, No. 2....8.25-8.875
- Fuel oil, No. 6....$1.20-2.00

Chicago, bulk
- Gasoline, 91 oct reg....12.5-12.8
- **Heating oil, No. 2....9.5†-10.3**
- Fuel oil, No. 6 high sulfur....6.65-6.75

Los Angeles, rack
- Gasoline, 88 oct reg....11.5-13.6
- Diesel fuel, PS 200....10-11.25
- Light fuel, PS 300....$3.05
- Heavy fuel, PS 400....$2.50-2.70

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....4-5

Pennsylvania Lubes
- Bright stock, 25 p.t....22
- 200 vis. neutral, 25 p.t....21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent 95 v. i....23-24
- Neutral, solvent, 200-210 vis....19.5-20.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v. i....24
- Neutral, solvent, 200 vis....20.5

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130....17.25
- Gasoline, 79 oct research....9.875
- Kerosine....10.125
- Gas oil, 48 d. i. minimum....10

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9....2.83-3.07
- North Dakota, 36.0-36.9....3.07
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00-3.07
  - West Texas, N. M., inter., 36.0-36.9....3.00
  - West Texas, N. M., sour, 32.0-32.9....2.86
  - East Texas, flat....3.25
  - Mirando, 28.0-28.9....3.31
- Illinois Basin, flat....3.00
- Pennsylvania Grade, Bradford dist., flat....3.90
- California, Signal Hill, 21.0-21.9....2.63-2.73†
- North Louisiana-Arkansas, 36.0-36.9....2.92-3.02
- Wyoming sweet, 36.0-36.9....3.00
- Wyoming sour, 32.0-32.9....2.71

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.)....2.61
- Leduc-Woodbend (Alta.)....2.67
- Redwater (Alta.)....2.56
- Daly (Man.)....2.39
- Smiley (Sask.)....2.33

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 48.0-48.9, Tucupido....3.75
- San Joaquin, 41.0-41.9, Puerto la Cruz....3.34
- Oficina, 35.0-35.9, Puerto la Cruz....3.05
- Tia Juana, Medium, 26.0-26.9, Amuay....2.55
- Bachaquero, flat, Las Piedras....2.03-2.08
- Tarra, 38.0-38.9, San Lorenzo....3.08
- Lagunillas Heavy, flat, Cardon....2.25

†Differential per deg. of grav. varies.

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....2.08
- Safaniya, 27.0-27.9, Ras Tanura....1.79
- Iran, 34.0-34.9, Bandar Mashur....2.04
- Iran, 34.0-34.9, Abadan....1.99
- Iraq, 35.0-35.9, Fao....1.98
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.85
- Qatar, 41.0-41.9, Umm Said....2.23

Middle East, Eastern Mediterranean
- Arabian, 36.0-36.9, Sidon....2.49
- Iraq, 36.0-36.9, Tripoli, Banias....2.49

Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, 37-38....2.75

KEY TANKER RATES

(Last paid, per long ton, single voyage)

U. S. Gulf-New York, clean. (USMC —30%) $2.00↓
U.S. Gulf-New York, dirty....(USMC —35%) $1.85
NWI-USNH, dirty....(USMC —57½%) $1.15
NWI-UK/Cont., dirty....(Scale —57½%) 13/10
Persian Gulf-UK/Cont., dirty....(Scale —50%) 30/2*
Persian Gulf-USNH, dirty....(USMC —60%) $5.08

**Sterling.*

Vertol 44 solves transport problem for oil industry

The petroleum industry has a new tool, the Vertol 44 helicopter, to cut manhours, money and misery out of exploratory drilling at remote sites.

The Vertol 44 is a heavy-duty, universal vehicle that makes the sky a 100 mph highway, almost any clearing a landing field. Gone is the need to hack roads in jungle, swamp and mountains. You may need it for these money-saving missions:

Flying Truck: The Vertol 44 carries more than 2 tons of cargo in tropical areas...transports the entire 175,000 lbs. of a drill rig over a distance of 50 miles out and back, in only 56 flying hours. Its 600 cu. ft. cabin accommodates 50% more cargo than any other commercial helicopter, with no problem of load placement.

Flying Bus: Airlifts up to 19 passengers ... 2 typical field crews ... to jungle derricks or offshore drills ... flies exploration teams to otherwise inaccessible spots.

Flying Crane: Hops rivers, ridges and swampland with sling-loads of pipe, rig superstructure, large pump components or even mobile field offices.

Flying Tractor: Frees mired vehicles, hauls barges, drags sledges. It has even towed a 3,000-ton ship.

For more information on this multi-purpose vehicle for the oil industry, write to: Customer Relations Department

VERTOL Aircraft Corporation

MORTON, PENNSYLVANIA.

The Case of the Missing Oil Drums

Oil's thorny distribution problems in the Union of South Africa have cost marketers millions. One hope for trimming costs: keeping closer tabs on hundreds of thousands of empty drums that keep disappearing.

When thousands of empty oil barrels disappear in the far reaches of South Africa, it becomes more than just a mystery. It's an economic headache for oil companies there.

The huge farming areas of South Africa have created much optimism about the oil market potential there. But achieving efficient distribution of products in these markets is a continuous problem.

One of the big drains on profits has been the nonreturn of expensive empty oil barrels. All oil companies have been plagued with the same problem. The major marketers are Caltex, Shell, BP, and Standard-Vacuum. Together, they share about 90% of the market. (Some products are still marketed under the Atlantic brand, but these operations now belong to Shell.) Total Oil Co., Ltd. (Cie. Francaise des Petroles) and the South African government-owned company, Sasol, share another 8% of the market.

Altogether, the oil industry has about $37.5-million tied up in drums that may or may not be returned. Some 750,000 barrels—valued at $10 each—have been written off as "lost forever."

About 3-million heavy-gauge steel barrels are in constant circulation. Their value ranges from $9 to $15 each. Some of the barrels are returned, many are not. The average turnaround on these 55-gal. drums is about 3 to 3½ times a year, and, if given proper maintenance, a barrel should be usable for about ten years. So it's not an easy loss to take.

The oil companies have already written off hundreds of thousands of lost barrels. There was no longer any hope that they'd be returned.

Nobody knows exactly who has all the unreturned empties. Many, however, can be seen scattered throughout the country in the form of drainage culverts, armchairs, bathtubs, and other do-it-yourself metalcraft.

Even though the farmers' accounts are charged $10 per drum, which is credited when the drums are returned, the farmers and their workers find a myriad uses for them.

The empties are also used as cooking utensils, wash tubs, flattened out pieces of metal for walls and roofs on houses, storage tanks, and many other things.

Strict government regulations, limiting bulk deliveries to a 30-mi. radius of supply depots, have wrapped oil companies in miles of marketing red tape.

The 30-mi. limit was set up in a Road Transportation Act adopted in 1930. Any exemption from this must be approved by the Road Transportation Commission. The power behind the commission is the government-owned South African Ry., which operates not only the railroads, but also a big truck and bus business.

Since the railroad relies heavily on revenues from oil company shipments, any proposal that would reduce these revenues faces a tough battle for approval.

For years, the government has also insisted on the use of heavy, 14-gauge steel drums (they cost more to ship), though there has been some easing up on these requirements in the past year or so.

Many shipments that would be more economical by truck transport now go by rail. They are sent to the railway station nearest to the farmer-consignee, and he must pick up his order there. Some farmers have to drive as far as 200 mi. to pick up deliveries.

On some of the huge farms (there are some that are bigger than the renowned King ranch in Texas), the farmer will spot the drums throughout

his fields—letting them serve as storage tanks.

In the past, the haphazard methods of returning empty drums have created colossal accounting problems and strained customer relations.

Since the drums are charged to a farmer's account until he returns them empty, many customers make an honest attempt to do so. To a farmer, this may mean taking all his weather-beaten empty drums (probably belonging to several suppliers) to the nearest railway station or siding. He'll just pile them alongside the track, weight down the waybill with a rock, and trust the railroad to get them to his supplier or suppliers.

If a strong wind doesn't whip the waybill into the jungle, the railway may know where to deliver the drums. If not, it loads any and all barrels aboard, and takes them all to the nearest depot or terminal on its route.

Quite often they are taken to a major coastal terminal, such as Port Elizabeth, Cape Town, East London, Durban, or Lourenco Marques.

That's only half the confusion. Then comes the job of sorting out the drums for return to the proper oil company. It's something like picking

the preferred source for technical help on compounding motor oils

Oronite's philosophy on *technical assistance* is that of providing lube oil additive research and know-how to your individual needs—meeting your cost requirements. Oronite recognizes that each compounding specification is different and assistance is a "must" on an individual basis.

Technical assistance from Oronite is a defined course of action embodying a group effort of scores of technically trained people specializing in compounding motor oils. Additive specialists in the field and the home office, sections of research chemists and engineers in the laboratories devote full time exploring, documenting and communicating new factual data on the science of compounding oils.

Today, Oronite is supplying over a hundred different additive compounds—having recorded engine tests on hundreds. New concepts, new performance data is continually being recorded to even greater benefit of Oronite additive customers.

When a company becomes an Oronite customer, technical service continues—providing the customer new data as it develops, suggesting ways of cutting costs, cooperating in every way possible to make your association with Oronite more valuable to you.

Why not call on Oronite and see the depth of technical help available to you?

ORONITE CHEMICAL COMPANY
A SUBSIDIARY OF CALIFORNIA CHEMICAL COMPANY
EXECUTIVE OFFICES
200 Bush Street, San Francisco 20, California
SALES OFFICES
New York, Boston, Wilmington,
Chicago, Cincinnati, Cleveland,
Houston, Tulsa, Los Angeles,
San Francisco, Seattle
EUROPEAN OFFICE
36, Avenue William-Favre, Geneva, Switzerland
4707

one's shoes from a heap of a hundred similar pairs in the middle of the floor.

Most of the drums are virtually unidentifiable, and the divvying-up process sounds something like this:

"This one seems to have once had some yellow paint, must be a Shell drum. . . Here's a speck of red—give it to Standard-Vacuum."

By this time, nobody knows who should get $10 credit with what company for what barrels. The result has been constant quibbling with customers, and complete confusion and wasted manpower in trying to keep accounting records.

In most cases, the oil companies give the customer the credit he claims, in order to maintain good customer relations. They feel that the man who, in good faith, has made an attempt to return the empty barrels is justified in demanding the credit due him. But it's the oil company's loss—if it didn't receive the empty drum.

What's more—even on the drums that do wend their way to the proper

supplier—the oil company has to pay the high rail rates for the return shipment of the heavy drums.

Most companies are now being forced to invest in new supply depots —at about $50,000 each. This way, they'll be able to make more bulk deliveries.

Building new depots seems to be the only sure way of making bulk deliveries, in compliance with the 30-mi. limit. This also means talking the farmers into buying 500-gal. storage tanks.

But oil companies seem to feel the investment will be worth while. They hope that bringing the depots closer to the customer will bring an added dividend by making it easier to return empty drums.

The government is lending a little more support now, too. It has granted some minor exemptions to the 30-mi. limitation, and it also co-

sponsors an annual campaign urging users and transporters of the empty drums to see that they are returned.

If a company is delivering to the edge of its 30-mi. radius, the commission will usually grant an exemption to deliver 30½ mi. from a depot. If it didn't, the required rail shipments would boost the cost significantly, and the companies feel it isn't fair to charge customers, within ½ mi. of one another such different prices. But appeals for exemptions that go much beyond this usually bring a veto, on the grounds that the commission can't afford to lose its revenues, and has to draw a line somewhere.

"If you ask for an inch, they're not going to give you a yard and a half," says one oil man.

The oil companies first appealed to the government to help them do something about the huge losses back in 1946. They weren't too successful at first, but in recent years, results have been more encouraging.

There's still a long way to go, however before distribution is anywhere near the "most economical possible."

Oil companies are constantly working to get the government to extend the radius for bulk deliveries to 50 mi. So far, the government won't approve such an extension—for fear of losing too much revenue. It appears to be a long, slow fight.

READY! YOUR COPY OF THIS NEW
ETHYLENE GLYCOLS FACTS BOOK!

Its 44 pages include • 15 pages of physical properties graphs • a 234-entry bibliography, with indices • natural gas dehydration schematic • chemical properties section, including reactions with esters, ethers, acetals and ketals; and oxidation and dehydration derivatives • section on potential applications and industrial uses.

Learn all the facts about the use of Ethylene Glycols in the production of antifreeze, resins and plastics, plasticizers, solvents and coupling agents; electrolytic capacitors, explosives, natural gas, and in solvent extraction. Plus other mighty interesting data!

It's free. Just tear off the side of the bathtub, fill in, then mail today.

JEFFERSON CHEMICAL COMPANY, INC.

HOUSTON • NEW YORK • CHICAGO • CLEVELAND
CHARLOTTE • LOS ANGELES

Ethylene Oxide, Glycols, Dichloride • Ethanolamines • Morpholine • Piperazine • Polyethylene Glycols • Nonyl Phenol • Surfonic® Surface-Active Agents • Ethylene Carbonate and Propylene Carbonate • Caustic Potash • Caustic Soda • Soda Ash • Sodium Bicarbonate

JEFFERSON CHEMICAL COMPANY, INC., 1121 Walker Avenue, Houston 2, Texas

Send me, FREE, your new ETHYLENE GLYCOLS TECHNICAL BULLETIN. Thanks.

NAME.....

FIRM NAME.....

ADDRESS.....

CITY.....ZONE.....STATE.....

Announcing an important new 26-page research study on

THE PETROCHEMICAL INDUSTRY

of timely interest to

EXECUTIVES and INVESTORS

An unusually comprehensive research study on the Petrochemical Industry, its past growth, present status, and future prospects, has just been published by Harris, Upham & Co.'s Research Department. This 26-page study . . .

- Discusses the background, uses, and past growth trends for the various petrochemical product groups.
- Compares the growth of petrochemical output with that of other chemicals.
- Analyzes the prospects for further broadening of petrochemical markets and replacing traditional materials such as steel, glass, wood, and non-ferrous metals.
- Highlights 11 selected chemical companies and 4 oil companies and discusses their participation in the petrochemical field.

Illustrated with numerous tables, this study will interest every chemical and petroleum industry executive and growth-conscious investor. You may obtain a free copy by writing Dept. P.

HARRIS, UPHAM & CO. BUSINESS EST. 1925

HARRIS, UPHAM & Co

Members New York Stock Exchange
and other leading security and commodity exchanges

120 Broadway, New York 5, N. Y.

35 OFFICES FROM COAST TO COAST

DRESSER engineering COMPANY

Since 1926 . . .

CONSULTANTS, DESIGNERS, AND CONSTRUCTORS OF:

Natural Gasoline and Liquefied Petroleum Plants – Desulfurization Plants – Compressor Stations – Solid and Liquid Dehydration Plants – Pipe Line Pump Stations – Recycling and Pressure Maintenance Plants – Petroleum Industry Process and Construction.

DRESSER ENGINEERING COMPANY

706 South Boston | P. O. Box 2518 | Tulsa 1, Oklahoma

for QUALITY . . . QUANTITY . . . SERVICE

Whatever the GRADE and the VOLUME of

NATURAL GASOLINE

Just rely on WARREN'S versatile facilities to give you dependable deliveries . . . WHERE and WHEN and the WAY you want them.

WARREN

PETROLEUM CORPORATION

TULSA, OKLAHOMA • Cable Addresses: STAVOLENE, WARREN

EXPORT TERMINALS: CORPUS CHRISTI, PORT ARTHUR, BAYTOWN, TEXAS CITY AND WARRENGAS (HOUSTON), TEXAS; SAN PEDRO, CALIF.

What's New

IN MARKETING

Standard Oil Co. (Ky.) is trying a "hard sell" approach to promote a new chassis grease with a Molysulfide additive.

Moly grease has been used widely by truck and bus fleets. Now Standard is pushing it for automobile grease jobs. The additive Molysulfide (trademark) is produced by Climax Molybdenum Co., which claims for its moly grease such advantages as: "It eliminates squeaks, provides easier steering, reduces wear on parts, and promotes safety."

Standard dealers are pushing the new moly grease on the driveways of 2,200 company-owned stations, and about 10,000 dealer stations in Florida, Georgia, Alabama, Kentucky, and Mississippi.

Standard officials feel that the new promotional pitch on grease jobs will increase both station traffic and product sales. They figure that it's easier to get a motorist into a station for a grease job than for an oil change. But once he's in—he's likely to ask for an oil change, transmission check, and other services, too.

•

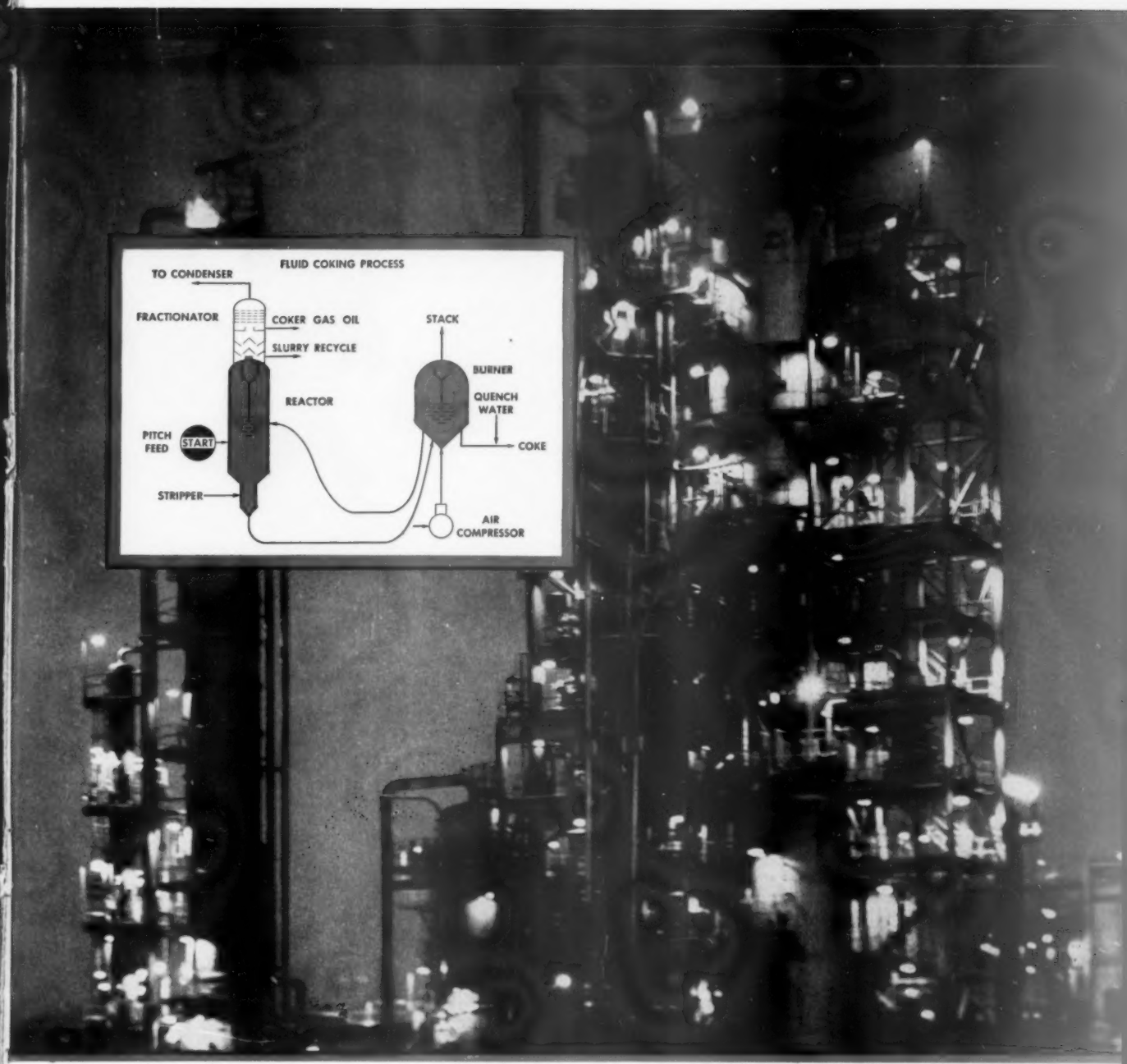
Cosden Petroleum Corp. continues to expand its marketing operations, with the acquisition last week of Cities Service Oil Co. (Del.) marketing properties in Dallas, Ft. Worth, West Texas, and eastern New Mexico.

Most of the retail and bulk outlets acquired on July 1 are located in areas where Cosden previously lacked representation. The transaction reportedly included 25 bulk plants and about 75 retail outlets—17 of which are in the Dallas-Ft. Worth area. The selling price reportedly was $2¼-million.

A spokesman for Cities Service called the transaction "mutually advantageous" for both companies. The outlets, he added, are not geographically located to be economically supplied by Cities Service. The two firms will honor each other's credit cards.

•

Sun Oil Co. completed its switchover to custom blending last week—ahead of schedule. The total cost: $10.3-million. Included in the conversion program: installing added underground storage at some 8,900 stations; installing 10,000 six-grade pumps; training about 35,000 people at 3,000 meetings to handle custom blending.



3800 B/D UNIT OF CANADIAN PETROFINA LTD., POINTE-AUX-TREMBLES, CANADA

FLUID COKING GIVES YOU MORE VALUABLE PRODUCTS FROM HEAVIEST RESIDUA

Esso Research and Engineering Company offers you *Fluid Coking*, the first successful fully continuous process for converting low value pitch into valuable lighter products. *Fluid Coking* actually handles the heaviest feed that can be pumped.

It results in a higher percentage of gas oils, and makes possible greater ultimate yields of good quality heating oil and gasoline, and smaller amounts of coke than any coking process ever developed. *Fluid Coking* is another achievement of the Esso Research program — 39 years of new process developments made available to refiners around the world.

Investment and operating costs are lower. "Fluidized coke" by-product is used as public utility fuel and in the smelting industry; other new and more valuable outlets have been developed.

Seven *Fluid Coking* installations are on stream. Licensees enjoy benefits of continuing *Fluid Coking* research. Flexible *Fluid Coking* can play an important part in helping you process heretofore uneconomical crudes and maintain your refinery balance. We would welcome your inquiry.

ESSO RESEARCH AND ENGINEERING COMPANY

P.O. Box 243, Elizabeth B, N. J.

Your key to progress... an Esso Research process

DEPT/Service & Equipment Companies

H. E. WIDDELL, president of Arthur G. McKee & Co., Cleveland, was elected a director of Raymond International, Inc., New York. Widdell's election reflects a new McKee-Raymond association for the designing, engineering, and construction of petroleum refineries and chemical plants for overseas customers. Raymond International was formerly known as Raymond Concrete Pile Co.

H. E. Widdell

J. B. Sewell

J. B. SEWELL has been appointed president of Garlock Packing Co. of Canada, Ltd., Toronto, subsidiary of Garlock Packing Co., Palmyra, N. Y. Sewell was promoted to vice-president of Canadian operations for the parent company in 1947. In 1954 he became general sales manager at Palmyra, and in 1955 was named vice-president of sales. Sewell will continue to reside in Palmyra.

RODNEY G. MORRISON was named district engineer of the Saskatchewan-Manitoba district of National Supply Co., Ltd., with headquarters at Regina. He has been a sales engineer at Regina since 1956.

FRED SEXTON is manager of Wilson Supply Co.'s new store in Monahans, Tex. He was formerly a field salesman for Wilson in Hobbs, N. M. **Homer Doughty, Jr.,** formerly a field salesman in Victoria, Tex., has moved to Wilson's sales office in Midland.

PIERSON M. RALPH has been appointed personnel director of Geophysical Service Inc., Dallas. He replaces **William T. Hudson,** who was named staff personnel administrator for manpower planning and coordination for Texas Instruments Inc., GSI's parent company. Ralph was formerly with GSI's cost engineering section, also in Dallas.

GLENN H. McINTYRE has become president and treasurer of National Spectographic Laboratories, Cleveland. He replaces **Howard Bedell,** former chairman, as treasurer. Bedell will remain on the board, primarily interested in selling spectographic equipment and services. The office of chairman has been eliminated. McIntyre was formerly vice-president and technical director of Ferro Corp., also in Cleveland.

G. E. Best

M. A. Park

L. W. Todd

C. H. Kellogg

JONES & LAUGHLIN SUPPLY DIVISION, Tulsa, has changed the number of its sales districts from three to four, and has appointed four new district managers. The new Mississippi district, at Laurel, was formerly a part of the North Louisiana - Arkansas - Mississippi district. **L. W. Todd,** formerly salesman at

MERCANTILE FINANCING

insures sound planning

OIL AND GAS DEPARTMENT
MERCANTILE NATIONAL BANK
DALLAS, TEXAS

Every day in every way you're getting
BUSIER AND BUSIER!

But there's still time to be well informed on the whole oil industry—with Petroleum Week's variable-speed reading

When you're in a real hurry and want a quick run-down of what's going on in the industry, just scan the bold-face type in each article. This gives you the essential facts and main points of interest in fast-reading capsule form.

For complete details on items that are of special interest, read the light-face type as well as the bold. Here you get the complete story, in simple, non-technical language—easy to read and understand.

This variable-speed reading technique was pioneered by Petroleum Week to save time for busy oil men.

It enables you to get the industry-wide information you want and need, more quickly and easily than was ever possible before.

CHARTER
LEASE
PURCHASE

Which one fits your business?

It's no news to you that today's markets are the hardest in ten years. Yet despite cautious corporate spending .. more Bells are being chartered, leased or purchased in 1958 than at any time in history. Why?

Corporations have had to trim both executive and sales forces. Remaining men must now handle more jobs, cover more territories, service more customers. Ground travel is too slow, and ordinary air travel is still dependent on airports and schedules, subject to quirks of weather. The versatile Bell, with its door-to-door flight plan, jumps off anywhere, anytime .. lands at will, refuels at a highway gas pump.

We'll say flatly (with hundreds of Bell-user reports for backing) that the Bell *will save your company money* .. plenty of it .. if: (1) Your key men in administration, production, engineering or sales make frequent trips into your operating territories; (2) Your best salesmen have difficulty covering out-of-the-way markets; (3) Your satellite plants demand regular visits from headquarters.

Like to find out for yourself? The way is open .. through CHARTER, LEASE OR PURCHASE.* Simply write us today, Bell Helicopter Corporation, Dept. 25G, Fort Worth, Texas. We'll send you the full story, promptly.

Watch "WHIRLYBIRDS" on TV ... consult your local paper for time and station.

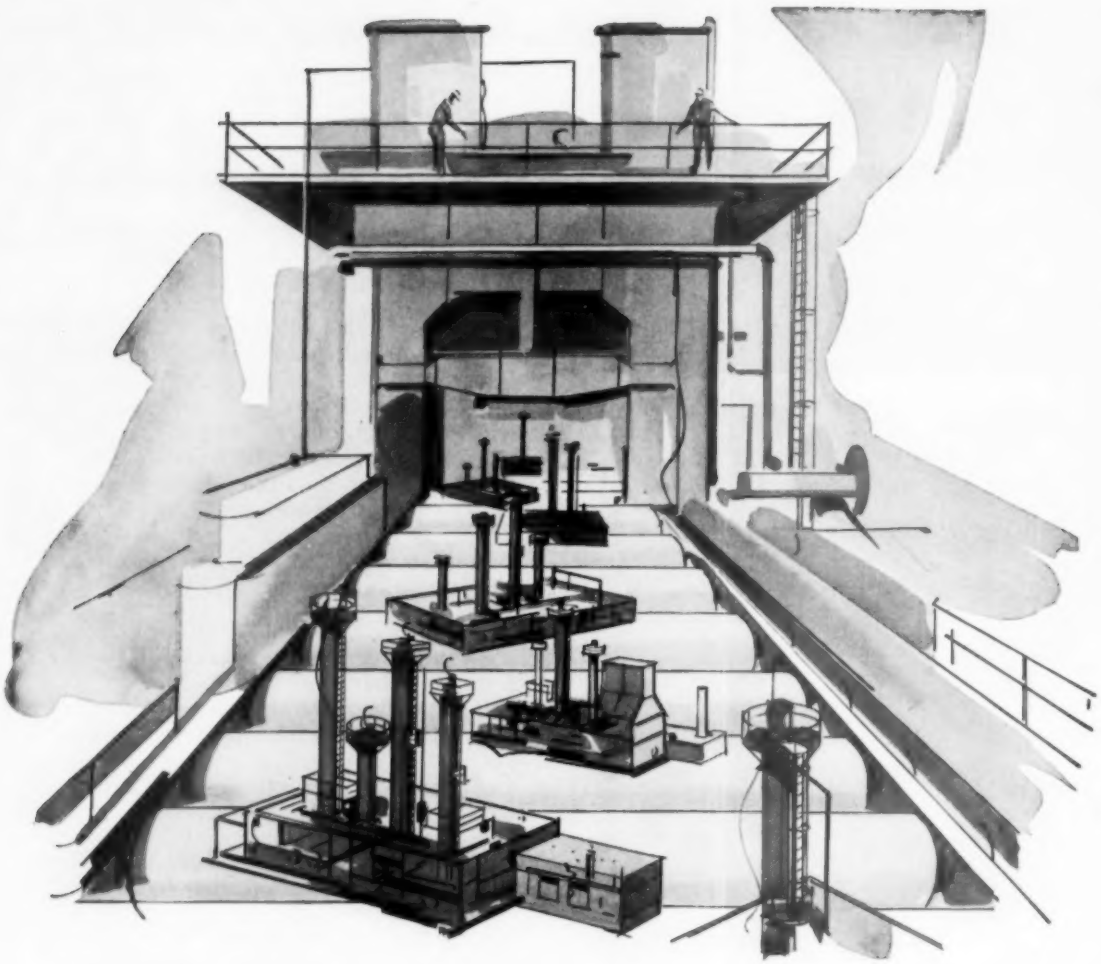
There are some 100 Charter Helicopter Services in the U.S. ... write us for their names.

BELL Helicopter CORPORATION

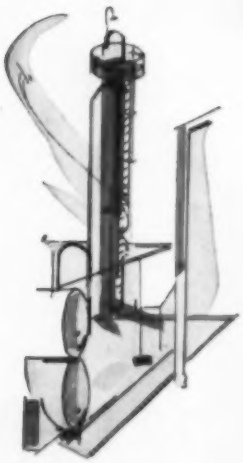
Subsidiary of Bell Aircraft Corporation

FORT WORTH, TEXAS

*Prices Start at $39,500



There's no production line for plant construction



There's nothing routine about this business of building petroleum refineries, chemical plants, and petrochemical plants. Every construction project is a different problem, a fresh challenge, an opportunity for new accomplishments. That's why we've assembled here at Procon an engineering and construction staff with the broad experience, the technical know-how, and the creative enthusiasm to meet and master any construction problem to your better-than-ordinary satisfaction. If you are in a building mood, Procon can help you!

PROCON *Incorporated*

1111 MT. PROSPECT ROAD, DES PLAINES, ILLINOIS, U. S. A.

PROCON (CANADA) LIMITED, TORONTO 18, ONTARIO, CANADA
PROCON (GREAT BRITAIN) LIMITED, LONDON, W. C. 2, ENGLAND
PROCON INTERNATIONAL S. A., SANTIAGO DE CUBA

WORLD-WIDE CONSTRUCTION FOR THE PETROLEUM, PETROCHEMICAL, AND CHEMICAL INDUSTRIES

Morgan City, La., was appointed district sales manager for the new district. **G. E. Best,** formerly manager of the Central Rocky Mountain sales district, was appointed manager of the North Louisiana-Arkansas district, at Shreveport. **M. A. Park** succeeds Best as Central Rocky Mountain district manager, at Casper, Wyo. **C. H. Kellogg** replaces Park as manager of the North Rocky Mountain district at Williston, N. D., where he was formerly a salesman.

E. A. Dunn

W. W. "Win" Harris

E. A. DUNN has been promoted to division manager of Continental-Emsco Co.'s new South Louisiana division, with headquarters at New Orleans. The new division was formerly part of the South Texas division, under the supervision of **R. A. Gentry,** in Houston. The South Louisiana division will include the Lafayette and New Orleans districts. **R. L. Cavnar** has been promoted to district manager of the Houston district, which, along with the Corpus Christi district now makes up the South Texas division. Four store managers have also been appointed by Continental-Emsco. They are: **D. W. Mayes,** Borger, Tex.; **E. O. Ross,** McAllen, Tex.; **J. E. Dennis,** Magnolia, Ark.; and **F. E. Smith,** Shreveport, La.

W. W. "WIN" HARRIS has joined Roots-Connersville Blower division of Dresser Industries, Inc., as vice-president of marketing in Connersville, Ind. Harris, formerly with General Electric Co. in Texas, will be responsible for the marketing of Roots-Connersville equipment in the United States and Canada.

CLEMENT H. HORST is new vice-president and general manager of the international division of Heyden Newport Chemical Corp., in New York City. He replaces **Ernest E. Holdman,** who is retiring.

JESSE O. SIMS has been appointed seismic supervisor for Robert H. Ray Co., in its newly opened Four Corners area district office, in Durango, Colo. Prior to this assignment, he served as seismic supervisor for RHR in Pakistan and in Houston.

RICHARD J. LAJOIE has been appointed assistant comptroller of the Oil Well Supply division of U. S. Steel Corp. Lajoie's offices will be in Dallas, where he has been Oilwell's general works auditor.

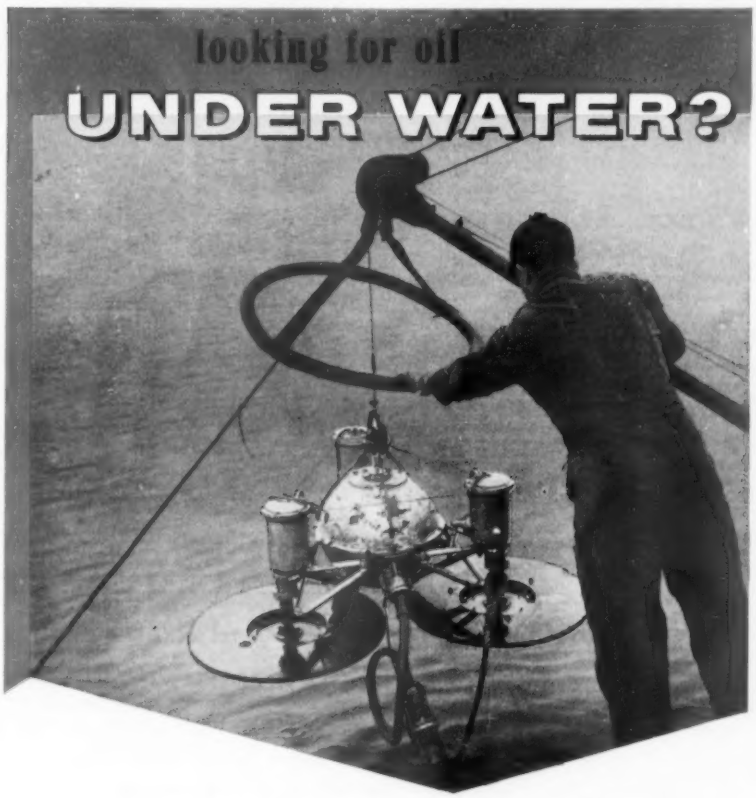
JOHN CASTLEMAN is in charge of the Atlanta sales office, and **CLAUDE L. DOUGHMAN** of the Tulsa sales office, of Midwest Piping Co., St. Louis. Both offices have recently been reopened by the company. **C. B. Moore** and **Cecil Hilliard** have joined Midwest as sales representatives in Houston. Moore has been associated with Jones & Laughlin Supply Division in Houston, and Hilliard was independently engaged in the oil field supply business, also in Houston.

JONES & LAUGHLIN SUPPLY DIVISION, Tulsa, has become exclusive distributor of products of Continental Tank Co., Oklahoma City, in the United States, Canada, and overseas.

ROSS E. SCHOFIELD has joined Kerrigan Iron Works, Inc., as southwest representative, with headquarters in Houston. He will provide sales engineering service to prospects and users of Kerrigan weldforged grating.

AUTOMATIC VALVE SALES CO., Newport Beach, Calif., has changed its name to **AUTOMATIC VALVE SYSTEMS CO.** "The name change more closely reflects Avsco's activities in the control field," say **David E. Griswold,** president.

JAMES E. DANHEIM was named executive secretary of the Assn. of Oilwell Servicing Contractors at its Dallas meeting. AOSC also announced that it will move its headquarters from Odessa to Dallas on Aug. 1.



Murky or clear, water can't cloud the answers to your exploration problems when a GSI underwater gravity party goes in search of them.

Data integration makes the difference. GSI cooperates with your exploration staff by interpreting data in the light of all available geophysical and geological information.

Remember... we not only work *for* you, we work *with* you.

Write today for Bulletin G 58-1 "Underwater Gravity Surveys"

GSI... continuing leadership through research and growth

GEOPHYSICAL SERVICE INC.
100 EXCHANGE PARK NORTH • DALLAS 35, TEXAS

DEPT/Personals

W. Naden

S. C. Hope

WILLIAM NADEN has been elected president of Esso Standard Oil Co., New York, succeeding **STANLEY C. HOPE**, who will retire on July 31. Naden was elected a director of Esso in 1946, vice-president in 1950, and has been executive vice-president since 1955. Hope, formerly president of Gilbert & Barker Mfg. Co., also an affiliate of Standard Oil Co. (N. J.), joined Esso in 1948 as executive vice-president, and became president in 1949.

LUTHER BERRY is president of the newly formed Berry Drilling Co., at Evansville, Ind. **Bill Hamilton** is vice-president, and **L. K. Hamilton** is secretary-treasurer.

H. M. GULLICKSON moves from legal manager of Shell Oil Co.'s Rocky Mountain area to the New York general office. **T. S. Zajac**, formerly chief mechanical engineer at Denver, becomes area gas manager at Los Angeles.

DENIS B. KEMBALL-COOK, director and vice-president of Shell Caribbean Petroleum Co. since 1957, will become executive vice-president in charge of exploration and production for Shell Oil Co., New York, on Sept. 1. He succeeds **Alan J. Galloway**, who is retiring. Kemball-Cook took charge of economics, supply, and refining for Shell in Venezuela in 1950, and in 1953 became a director of Compania Shell de Venezuela.

D. B. Kemball-Cook

C. J. Christensen

C. J. CHRISTENSEN was appointed production superintendent for Pan American Petroleum Corp.'s Canadian division at Calgary. He succeeds **T. C. Borland**, who has moved to New York as vice-president of production and a director of Pan American International Oil Co., subsidiary of Pan Am. Christensen has been assistant production superintendent for Pan Am's Rocky Mountain division, in Casper, Wyo.

WALTER R. BOWMAN and **VIRGIL I. HELGEN** have formed B&H Drilling Co., with offices in Olney, Ill.

ROBERT K. ESKEW has been named director of engineering, research, and development for Arkla Air Conditioning Corp., Shreveport, subsidiary of Arkansas-Louisiana Gas Corp. Eskew was formerly president of York Houston Sales, Inc., air conditioning distributor for York products.

DR. FRANK G. PEARCE is director of project engineering for Amoco Chemicals Corp., in Chicago. Prior to joining Amoco Chemicals, Pearce spent 11 years with Pan American Petroleum Corp., Tulsa, as supervisor of the research department's process design section. Amoco and Pan Am are both affiliates of Standard Oil Co. (Ind.).

GRANT E. JUDGE, specialist in petroleum tax matters, has joined F. A. Callery Co., Houston. Judge has been a partner in the auditing firm of Arthur Andersen & Co., in Houston, since 1942.

G. E. Judge

J. W. Rachick

JAMES W. RACHICK is the new superintendent of the insurance division of Natural Gas Pipeline Co. of America and its affiliates, in Chicago. He succeeds **N. D. Holman**, who has retired. Rachick, with the company since 1950, was named assistant superintendent in 1956.

OLOF PERSSON has been named managing director of Svenska Gulf Oil Co. A. B. Stockholm. Persson, formerly vice-managing director, replaces **Gustaf Dahlborn**, who is retiring.

ROBERT D. BENT has been appointed manager of Atlantic Refining Co.'s technical service department, newly established to aid refinery operations. Bent, formerly assistant director of the research department's development division, will report to the vice-president and general manager of manufacturing, in Philadelphia.

GEORGE E. MAYS has been assigned as assistant to **L. W. Finlay**, shareholders' representative for Standard Oil Co. (N. J.) in Germany, Belgium, and the Netherlands, and

CLASSIFIED

WANTED
Dynamic Marketing Administrator
To assume full charge of a group of service stations in the Northwest. Unlimited opportunity to expand. Must have experience and ability to successfully design new marketing ideas. Salary commensurate with ability. All replies treated confidentially. Write P-8212 Petroleum Week, 68 Post St., San Francisco 4, Calif.

300,000 Acres in Ohio Trend Area

Oil and Gas Leases available in the Benedum Trend area from Lake Erie through to Muskingum and Perry Counties in Southern Ohio. All acreage obtained using latest geological research. NO PRORATIONING IN OHIO. Geological reports available. Producing depths range from 500' to 5,000'. Acreage available on reasonable terms. All acreage in 1,000 acre unitized blocks. Contact:

BO-8406 PETROLEUM WEEK
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

NAT. 130 DRILLING RIG FOR IMMEDIATE SALE IN COLOMBIA

One complete Nat. 130 rig, with all normal auxiliary components. Six years old and has drilled total 118,000 ft.

Rig is in sound operating condition. Sale will be made by bid only. All inquiries and replies should be addressed to:

General Manager
International Petroleum (Colombia) Ltd.
Apartado Aéreo No. 3533
Bogotá, Colombia, S. A.
(Telephone: 437-400)

FOR SALE

Quart Oil Filling Line, M & S 9 piston Filler, Standard Knapp Caser, Standard Knapp Gluer & Sealer. Excellent condition.

MACHINERY AND EQUIPMENT CO., INC.
123 Townsend Street, San Francisco, Calif.

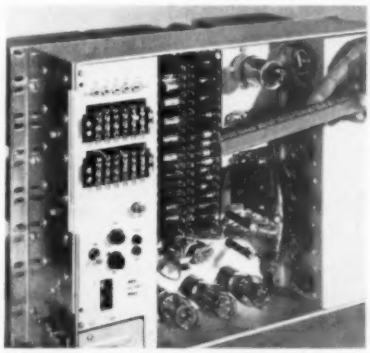
FOR SALE

Complete Refinery ready to operate. 2500 b/d crude still, 1200 b/d Thermal Cracker, 80,000 bbls. tankage, Gasoline Blending Plant, Office, Laboratory, Loading Rack, formerly Jet Fuel production. Price $100,000. Location, Palestine, Texas.

Phone S. J. Cohen, Green Acre Lane
Westport Conn. Cap 72597

new Lenkurt **microtel** Type 74A planned for your growth!

Basic terminal of Lenkurt *Microtel* consisting of a transmitter, receiver and power supplies.



Power supply for the transmitting and receiving klystrons. The only active components in this supply are three voltage regulator tubes.

This new Lenkurt Type 74A system answers all point-to-point communications requirements. Operating in the high-frequency industrial band (Operational Fixed) from 6575 to 6875 megacycles, it is clean in design, reliable and highly flexible. With Lenkurt 45BX Carrier, a single terminal can accommodate from 4 to 240 channels, *over the one antenna system!*

Look at these important features:

- **Easy to install**—Standard 19-inch rack mounting; compact plug-in construction.
- **Easy to maintain**—Miniaturized plug-in components similar to Lenkurt 45-class equipment; all components accessible from front; built-in test facilities.
- **Less power consumption**—Fewer tubes; operates from standard battery supplies or from 115-volt a.c. mains.
- **Stand-by flexibility**—Frequency diversity or space diversity; combining or transfer facilities.
- **Economical expansion**—With r-f circulators 2, 3 or 4 terminals can be added to same antenna system.
- **Automatic switching**—Permits unattended operation; back-to-back terminal equipment permits dropping and reinserting of channel groups at repeater points.
- **System length**—Up to 300 miles with medium loading and multiple repeater points or considerably farther depending on specific requirements.

Automatic Electric Sales Corporation
Northlake, Illinois

Please send booklet describing new Lenkurt Microtel Radio System.

Name..... Title.....

Company.....

Address.....

City..... Zone..... State.....

AUTOMATIC ELECTRIC

Subsidiary of **GENERAL TELEPHONE**

chairman of the coordination committee for Europe, with headquarters in Hamburg, Germany. Mays was most recently corporate contacts assistant, in New York, for Norway, Sweden, Denmark, Finland, and other Jersey affiliates.

ROBERT T. BONN was elected treasurer of Esso Export Corp., New York, affiliate of Standard Oil Co. (N. J.). Bonn succeeds **R. B. Stokke,** who will remain on Esso Export's board. From 1950 to 1954, Bonn served as senior economic analyst and assistant treasurer with Creole Petroleum Corp., Venezuelan affiliate of Jersey Standard. He moved to the parent company in 1954 as senior foreign exchange analyst in New York, and joined Esso Export as assistant treasurer in 1956.

JAMES M. WYLDER has joined Husky Hi-Power, Inc., as personnel supervisor in the industrial relations department at Cody, Wyo. He was formerly with the employee relations department of Mobil Producing Co., in Billings, Mont.

R. M. ENGLISH has been appointed exploration manager of the Colorado district for Carter Oil Co., in Durango. **M. M. Mulholland** replaces English as head of Carter's northern division geological stratigraphic section, at Billings, Mont.

T. A. ANDERSON, L. R. FORKER, and **R. W. GRUNERT** were elected directors of the Pennsylvania Grade Crude Oil Assn., at its annual meeting in Bradford, Pa. Anderson is superintendent of the St. Marys (Pa.) plant of Quaker State Oil Refining Corp.; Forker is executive vice-president of Quaker State, in Oil City; and Grunert is senior vice-president of South Penn Oil Co., also in Oil City.

J. T. BAKER heads the new geophysical technical services section, and **J. D. SKELTON,** the new geophysical interpretation section, of the recently reorganized geophysical department of Jersey Production Research Co.'s Tulsa laboratories. Baker and Skelton have been associated with the research center since 1948. **Morris W. Leighton,** with the center since 1951, will head one of the two sections of the recently divided geological research section in the geological division.

G. M. Knebel

W. E. Wallis

V. C. Maley

G. M. KNEBEL has been appointed to the newly created position of senior exploration advisor of Standard Oil Co. (N. J.), in New York. He will be succeeded as manager of the exploration division by **William E. Wallis,** who will be replaced as deputy manager by **Vaughn C. Maley,** regional geologist for South America. Knebel has been exploration manager in New York since 1944. Before that, he served as a director, vice-president, and manager of Standard Oil Co. of Venezuela, predecessor of Creole Petroleum Corp., Jersey affiliate in Caracas. Before becoming deputy exploration manager for Jersey in 1954, Wallis was exploration manager for Creole. Maley transferred from Humble Oil & Refining Co., Houston, to the parent company in 1956, as regional geologist for South America, with offices in New York.

ADVERTISERS IN THIS ISSUE

Allied Chem. Corp., Nitrogen Div.	Cover 2
Automatic Electric Co.	93
Axelson Mfg. Co, Div. U.S. Industries, Inc.	65
Bank of Montreal	31
Beaird Co., Inc., The J. B.	66
Bell Helicopter Corp.	89
B-J Service, Inc., Sub. of Borg-Warner Corp.	Cover 3
Byron-Jackson Tools, Inc., Sub. of Borg-Warner Corp.	47-48
Bucyrus-Erie Co.	42
Chiksan Co.	13
Continental-Emsco Co.	45
Continental Oil Co.	69
Crose Mfg. Co., M. J.	63
Davison Chemical Co.	8
Dowell	16
Dresser Engr. Co.	86
Drilling Equipment Mfg. Co.	38
DuPont, Petrol. Chem. Div.	53-54
Esso Research & Engineering Co.	87
Ethyl Corp.	22
First National Bank & Trust of Tulsa	64
Fish Engineering Co.	19
Ford Motor Co.	4-5
Foster Wheeler Corp.	75
Foxboro Co.	62
Geophysical Service, Inc.	91
Graver Tank & Mfg. Co.	70
Gulf Oil Corp.	95
Hammond Iron Works	27
Harris Upham Co.	86
Houston Ready-Cut House Co.	58
Humble Oil & Refining Co.	12
Hycalog, Inc.	71
Jefferson Chemical Co.	85
Jones & Laughlin Steel Corp.	10
Jones & Laughlin Supply Div.	40-41
LeTourneau, Inc., R. G.	39
Mercantile National Bank	88
Metals Disintegrating Co., Inc.	34
Mid-Continent Supply Co.	2
Milwhite Mud Sales Co.	33
Minneapolis-Honeywell	29
Nordstrom Valve, Rockwell Mfg.	49
Oil Well Supply Div., USS	35
Olin Mathieson Chem. Corp.	20-21
Oronite Chem. Co.	84
Parkersburg Rig & Reel Co.	6
Penrod Drilling Co.	57
Petreco Div., Petrolite Corp.	59
Porter Company, Inc., H. K.	74
Pritchard & Co., J. F.	7
Procon, Inc.	90
Raymond Int'l., Inc.	73
Reading & Bates Offshore Drilling Co.	46
Refinery Engineering Co.	56
Republic Nat'l. Bank of Dallas	3
Sinclair Oil Corp.	1
Southern Marine & Aviation Underwriters, Inc.	67
Sun Oil Co.	52
Texas Employers Insurance Assn.	11
Timken Roller Bearing Co.	Cover 4
Tretolite Div., Petrolite Corp.	76
Twenty Grand Towing Co.	61
Universal Oil Products Co.	14-15
Vertol Aircraft Corp.	83
Warren Petroleum Corp.	86
Welex, Inc.	50-51
Western Supply Co.	9
Western Geophysical Co.	37

Classified Advertising
F. J. Eberle, Business Mgr.

Business Opportunities	92
Employment Opportunities	92
EQUIPMENT	
Used or Surplus New For Sale	92

REPRESENTATIVES PETROLEUM WEEK

Atlanta 3 — Douglas C. Billian
1301 Rhodes-Haverty Bldg.
Jackson 3-6951

Boston 6 — Edward A. Callahan, Jr.
350 Park Square Bldg.
Hubbard 2-7160

Chicago 11 — W. F. Holbrook
520 North Michigan Avenue
Mohawk 4-5800

Cleveland 15 — J. E. MacArthur
1164 Illuminating Blvd.
55 Public Square
Superior 1-7000

Denver 2 — J. W. Patten
Mile High Center, 1740 Broadway
Alpine 5-2981

Houston 25 — D. O. Hanson
724 Prudential Bldg.
Jackson 6-1281

Los Angeles 17 — Peter S. Carberry
1125 W. Sixth St.
Huntley 2-5450

New York 36 — Edward A. Callahan, Jr.
Donald R. Thompson
500 Fifth Ave.
Oxford 5-5959

Philadelphia 3 — W. A. Potter
6 Penn Center Plaza
Rittenhouse 6-0670

San Francisco 4 — William C. Woolston
68 Post Street
Douglas 2-4600

Tulsa 3 — J. A. Hartley
909 Enterprise Bldg.
522 South Boston
Gibson 7-5594

England, London E. C. 4 — Herbert Lagler
McGraw-Hill Co., Ltd.
95 Farrington St.

IN THIS 4 OZ. BOTTLE ARE 7500 MILES OF STALL-FREE DRIVING

You're looking at a sample of Gulf Agent 178, the new antistalling additive you can use to effectively and economically stallproof your modern volatile motor gasoline against carburetor icing. Here are some things you should know:

FULLY PROVEN IN SERVICE — Its outstanding performance in protecting the motor gasolines of major refiners against stalling—in all types of cars, over a complete range of seasonal and climatic conditions—is convincing proof of its effectiveness.

LOW IN COST — The small dosage required—15 to 20 pounds per 1,000 barrels — affords a minimum treating cost and it eliminates the cost of expensive additive storage facilities.

EASY TO USE — Gulf Agent 178 is readily soluble in all petroleum products from temperatures of minus 30° to plus 140°F., and can be conveniently added with existing blending facilities.

INSOLUBLE IN WATER — It is completely insoluble in water and is not removed by water bottoms in conventional product storage and transfer systems.

PROTECTS AGAINST CORROSION—You get an extra bonus with Gulf Agent 178 because it's also an effective corrosion inhibitor. This helps lengthen the life of your distribution and storage facilities, at no extra cost to you.

Let us demonstrate how Gulf Agent 178 can improve *your* gasoline. For more information, write or phone.

Petrochemicals Department
GULF OIL CORPORATION
Gulf Building, Pittsburgh, Pa.

GULF

QUALITY CHEMICALS *from* PETROLEUM

It's Not Hard to Kill a Goose

THERE IS A POPULAR MISCONCEPTION that once oil is discovered in a state, great wealth will start to roll in. The expectation is that the state's revenues from royalties and rentals on state-owned lands and from severance taxes on production will keep it forever from want. Such states are usually the envy of their have-not sisters.

Deposits of natural resources are valuable. But just because they exist beneath the surface of a state doesn't mean there will be a bonanza of wealth to flood the public coffers.

The older oil and gas states learned that long ago. And the newcomers are beginning to find out the hard economic facts.

UTAH FACES SOME TOUGH PROBLEMS as a relatively new oil state. As in most western states, the federal government is the predominant landowner in Utah. Some 70% of the total land area of the state lies within federal withdrawals of one kind or another, according to Frank Allen, director of the Utah State Land Board.

When such land was withdrawn, the state could select equal acreage elsewhere on the public domain for school sections, but such sections had to be devoid of known mineral potential.

The result is that Utah is relatively a small landowner, and a poor one at that.

So far, state lands have been available for leasing at a rental of 50¢ an acre—the same rent charged by the federal government. The state also collects 12½% royalty on production.

The State Land Board's position is, Allen says, that "the greatest eventual advantage will be realized from creating a pleasant and favorable economic atmosphere for oil exploration"—a view that is contrary to that of a growing number of Utah's taxpayers.

They look at the apparent wealth being gained by another large landowner in the state—the Navajo Tribe. The Navajos lease their lands on bonus bids and royalty of 12½% and higher—depending on how close the lands may be to prime producing areas.

THE CLAMOR AMONG THE VOTING PUBLIC is for the state of Utah to follow a like course of action. The matter will be one for the next session of Utah's legislature to resolve.

Such a situation causes Allen to question whether the possible introduction of competitive bidding for state lands would "decelerate" oil development. It's a good question.

Similar situations have occurred in other states. The desire to cash in by hiking business tax rates—which is, in effect, what could happen in Utah—has chased industries, even long-established ones, to other areas. No oil company or independent operator is going to risk capital in an area where the economic atmosphere precludes the opportunity to make a reasonable profit.

It takes a long time to develop the oil potential of a state. It will take even longer unless the economic atmosphere is favorable.

The Most Efficient Service Force in the Fields

BJ SERVICE

OIL WELL CEMENTING

ACIDIZING
Each job engineered to assure maximum results.

GEOFRAC
Emulsified acid-in-kerosene fracturing fluid.

AQUAFREE
A service employing the latest techniques in water block removal.

AQUAFRAC
Gelled or ungelled water fracturing service.

SELECT-O-BALL
Selective multiple fracturing technique.

WALL-HOLD
Plastic-coated walnut shell service for sand control.

MUD-SOL
Three distinct mud removal services.

CPN
Emulsion block removal service.

VISQUEEZ
A new and superior method for shutting off water.

OILFRAC
Unemulsified or ungelled sand-oil service.

T-O FRAC
Gelled, or thickened oil, fracturing service.

FORMJEL
Within-formation temporary blocking agent.

MORE THAN EVER in today's competitive and cost-conscious market, *results count!* BJ Service groups work as a team to get these results. Our field men are proven veterans who know local conditions and have the answers when special problems arise. Our equipment—designed and built in our own manufacturing division—is years ahead in performance. Our field stations—more than 50 in all—are fully equipped and staffed to meet local service requirements. You can depend on BJ Service to deliver on the tough jobs as well as the routine runs. Call us for faster, better results!

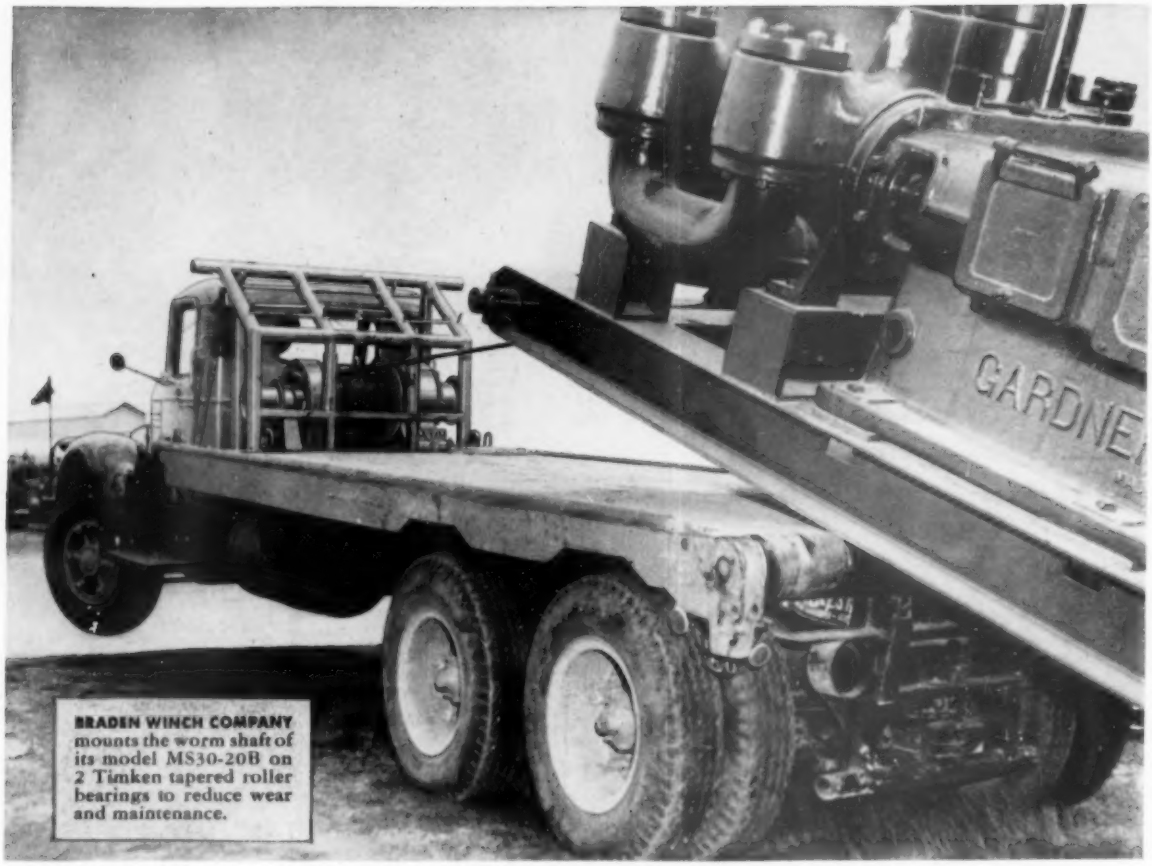
BJ SERVICE, INC.
A BORG-WARNER SUBSIDIARY

Long Beach, California · Fort Worth, Texas

Stations throughout Mid-Continent, Gulf Coast, Rocky Mountain and California areas.

OIL WELL SERVICES
BJ Service
A BORG-WARNER SUBSIDIARY

For additional information on these services contact your nearby BJ Service field station.



BRADEN WINCH COMPANY mounts the worm shaft of its model MS30-20B on 2 Timken tapered roller bearings to reduce wear and maintenance.

Truck rears back on haunches—but with TIMKEN® bearings winch takes load in stride

THE Braden winch above has a capacity of 30 tons—a gear ratio of 39 to 1. To meet the formidable loads placed upon heavy-duty winches such as this model MS30-20B, Braden mounts worm shafts on Timken® tapered roller bearings. The special tapered design of Timken bearings enables them to shrug off sustained heavy thrust as well as radial loads from the worm—keeps worm and worm gear accurately meshed for minimum friction, minimum wear.

Timken bearings are rugged enough to take the shock loads transmitted back through the worm because rollers and races are case-hardened to give them hard, wear-resistant surfaces over tough, shock-resistant cores. And friction is practically eliminated because Timken bearings are geometrically designed to roll true, manufactured with microscopic accuracy to live up to their design. This means the bearings normally last the life of the machine.

As an extra step to insure the quality of its bearings, the Timken Company makes its own fine-alloy steel. It's the only bearing manufacturer in America that does.

Next time you build or buy a machine, make sure it has Timken tapered roller bearings. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable: "TIMROSCO".

This symbol on a product means its bearings are the best.

TIMKEN TAPERED ROLLER BEARINGS ROLL THE LOAD

TRADE-MARK REG. U. S. PAT. OFF.